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FACULTY OF NURSING UNIVERSITAS AIRLANGGA

TRANSFORMING THE FUTURE HEALTH CARE THROUGH RESEARCH AND INNOVATION

PROCEEDING

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FOREWORD

The book is made as the ongoing effort to embrace rapid changes in our world which have impact to health. We need to prepare and leverage innovative approaches in dealing with social, economic, and environmental changes. Also, we have to help the population achieve sustainable future health through nursing research and innovation.

This book covers the recent discussion made by nursing scholars in various topics including nursing education, community nursing, clinical nursing, management and leadership, research practice, as well as innovation needed. It also covers discussion on nursing disaster management, non-communicable diseases, mental health and wellbeing, maternal and child health, tropical diseases, health law and policies, climate change, healthrelated issues, and sustainable development goals.

Preparing future health, nurses need to be transforming and active in advocating sustainable health for the better future. As the largest health workforce, nurses have pivotal roles in making changes with innovative strategies and actions. Nurses should realize that, with togetherness and collaborations, they are not only able to treat patients individually but also address problems in the society and environment. That is the spirit that we want to bring: Transforming the future health care through research and innovation.

We hope this book provides good contribution in increasing the quality of health care services and nursing scholarships. We thank our authors who have been willing to share their ideas and expertise to the readers. Thank you.

INC 14 COMMITTEE

TABLE OF CONTENT

Connection Water, Sanitation, And Hygiene (Wash) With Stunting In Toddlers 0-59 Months In The Working Area Of Merakurak Puskesmas, Tuban District

Nur Isnaini Wulan Rahmadhani[1], Nuzul Qur'aniati[1] , Ika Nur Pratiwi [1], Mundakir[2]

*Abstract---*In recent years, stunting has remained a nutritional issue for toddlers. Tuban Regency is one of three regencies with a high rate of open defecation, at 5.18 percent. The goal of this study was to analyze the relationship between water, sanitation, and hygiene (WASH) and stunting in children aged 0 to 59 months at Merakurak Health Center in Tuban Regency. The study used quantitative with an analytical observational research design with a cross-sectional approach. The sample size is 56 mothers, and the sample was collected using a total sampling technique. The dependent variable was stunting in toddlers aged 0 to 59 months and WASH. A questionnaire was utilised as the instrument. The chi-square test is used for descriptive and inferential analysis. the findings revealed no significant association between drinking water source variables (p=0.39) or physical quality of drinking water (p=0.93) and stunting in toddlers. Meanwhile, there was a significant association between toddler stunting and latrine ownership (p=0.024) and hand-washing behaviours (p=0.048). Poor hand-washing practises and the provision of training courses that do not fulfil the standards are acts that are closely tied to infectious diseases, such as diarrhoea. Types of healthy latrines and Clean and Healthy Life Behavior, specifically the practise of washing hands with soap after defecation, after throwing away children's excrement, before feeding children, and after eating, would help to shorten the disease transmission chain.

Keywords-- *toddler, stunting, water, sanitation, hygiene*

I. INTRODUCTION

Stunting is a nutritional problem in toddlers that has become a global concern in recent years, especially in low- and middle-income countries. Stunting is caused by direct factors, such as poor nutritional status and indirect factors namely Water, Sanitation, and Hygiene (WASH) [1, 2]. The incidence of stunting under five in the last three years in Tuban Regency is still above the prevalence in East Java Province, which means this is still a problem for the Government of Tuban Regency [3]. Apart from the high incidence of stunting, Tuban Regency is also one of 3 regencies where there are still many people who defecate openly, which is one of the WASH indicators for stunting in toddlers. The high stunting among toddlers in Tuban district is a problem that needs to be addressed.

Tuban Regency is one of the areas in East Java with a high prevalence of stunting under five. In 2014 the number of stunted toddlers in Tuban Regency reached 36.6%, decreased in 2015 to 31% and in 2016 it was 28% [3]. Even though there is a decreasing trend of stunting under-fives every year, the prevalence of stunting under-fives in the last three years in Tuban Regency is still above the prevalence in East Java Province [3]. The medical record data for stunting toddlers at the Merakurak Health Center in Tuban Regency has seen a significant increase from 9.65% in 2018 to 9.9% in 2019, and 19,2% in 2020.

Stunting can occur due to direct or indirect factors. The direct factors of stunting are the mother's nutrition during pregnancy, infectious diseases, and the nutrition of the toddlers themselves, while the indirect factors can occur from various aspects [4]. One of the indirect factors causing stunting is WASH which consists of drinking water sources, physical quality of drinking water, latrine ownership and hygiene, namely the habit of washing hands [5, 6]. WASH affects the nutritional status of stunting in toddlers, namely through the infectious diseases they experience, for example, the incidence of diarrhoea that affects toddlers. 88% of cases of diarrhoea are caused by poor drinking water sources, inappropriate sanitation and poor hygiene [4]. Efforts are being made to deal with stunting, namely improving environmental and water sanitation by increasing access to and quality of clean water [7]. According to Ahmad and Nurdin [8], toddlers who come from households that cannot access clean water have a greater risk of experiencing *stunting* compared to toddlers who come from households that have access to clean water. However, research on the relationship between *Water, Sanitation, and Hygiene* (WASH) and *stunting* in toddlers has not been widely studied in Indonesia compared to other countries, especially in developing countries. *Water, Sanitation, and Hygiene (WASH)* with *Stunting* in Toddlers 0-59 Months in the working area of the Merakurak Health Center, Tuban Regency "to find out what sanitation indicators are related to *stunting* in toddlers 0-59 months.

II. METHODS

The research used was quantitative with an *analytic observational research design* with a *cross-sectional* approach. The sample size is 56 mothers who have toddlers recruited using the total sampling technique. The dependent variable in this study was *stunting* in toddlers 0-59 months. The independent variable is *water, sanitation, and hygiene.* The instrument used is a questionnaire. The analysis in this study is descriptive and inferential using the *chi-square test.*

III. RESULTS

Table 1 shows that the majority of mothers are aged 26-30 years (30.4%) and have a high school educational background (39.3%), whereas the majority of toddlers are aged 37-48 months (32.1%) and boys (53.6%). The majority of mothers with high school education as many as 22 people (39.3%). Table 2 demonstrates that the majority of the number of stunting toddlers fall into the short category (83.9%). Table 3 reveals that water from protected water supplied by the Local Water Supply Utility (26.85%) and bottled/refilled mineral water are the most common drinking water sources (41.1%).

Table 4 shows that the biggest factor causing respondent's physical quality of drinking water to fall short of the requirement is coloured drinking water (39.3%.). In the latrine ownership variable, it was found that many latrines, particularly the septic tank did not meet the requirements for a healthy latrine. As many as 64.3% of respondents do not have a septic tank or a pit. The typical cause of the respondent's bad hand washing habit in the hand washing habit variable is not washing their hands after contact with animals (66.1%).

Table 1. Distribution of Respondent Characteristics in the Working Area of Merakurak Health Center with
Number of Respondents (n = 56)

Category	n	%
Mother's Age		
20-25 Years	16	28,6
26-35 Years	17	30,3
36-45 Years	16	28,6
46-50 Years	7	12.5
Toddler Age		
0-12 Months	2	3,6
13-23 Months	8	14,3
24-36 Months	16	28,6
37-48 Months	18	32,1
49-59 Months	12	21,4
Toddler Gender		
Man	30	53,6
Woman	26	46,4
Mother's Education Level		
Elementary School	8	14,3
Junior High School	14	25
Senior High School	22	39,3
D-III	3	5,3
S-1	9	16,1
Mother's Occupational Status		
Work	21	37.5
Doesn't work	35	62.5
Number of Children Owned by Mother		
< 2 Children	31	55,4
> 2 Children	25	44,6
Total	56	100

Table 2. Categories of Stunting Toddlers in the Working Area of the Merakurak Health Center with the
Number of Respondents (n = 56)

stunt	n	%
Short (*stunted*)	47	83.9
Very short (*severely stunted*)	9	16,1
Total	**56**	**100**

Table 3. Frequency of Drinking Water Sources in the Working Area of the Merakurak Health Center with Number
of Respondents (n = 56)

Source of Drinking Water	n	%
Local Water Supply Utility	15	26,8
Bottled mineral water/refillable water	23	41,1
River water	0	0
Well water	18	32,1
Rainwater Storage	0	0

Table 5 shows that the majority of drinking water sources are protected, with stunted toddlers falling into the short category (58.9%). The physical quality of drinking water is dominated by the physical quality of drinking water that fulfils the standards, there are 64.3% of stunted toddlers are in a short category. Whereas in the short category of stunting toddlers, more respondents did not have healthy latrines, accounting for up 51.8 percent. The majority of respondents have poor hand-washing practises (57.1%).

Table 4. Frequency of the Physical Quality of Drinking Water, Latrine Ownership and Handwashing Habits in the Work Area of the Merakurak Health Center with Number of Respondents (n = 56)

Variable	Yes	No
Physical Quality of Drinking Water		
Cloudy	16 (28.6%)	40 (71.4%)
Coloured	22 (39.3%)	34 (60.7%)
Smelled	13 (23.2%)	43 (76.8%)
Taste	15 (26.8%)	41 (73.2%)
Latrine Ownership		
Have a family latrine	49 (87.5%)	7 (12.5%)
The occupants of the house, including toddlers, use the family latrine	46 (82.1%)	10 (17.9%)
Closed latrine superstructure	48 (85.7%)	8 (14.3%)
There is a swan neck construction	48 (85.7%)	8 (14.3%)
There is a sewage system	26 (46.4%)	30 (53.6%)
There is a septic tank or cubluk	20 (35.7%)	36 (64.3%)
Hand Washing Habits		
Wash hands using running water	56 (100%)	0
Wash hands using soap	20 (35.7%)	36 (64.3%)
Wash hands before eating	52 (92.9%)	4 (7.1%)
Wash hands before processing and serving food	37 (66.1%)	19 (33.9%)
Wash hands before feeding	30 (53.6%)	26 (46.4%)
Wash hands before feeding babies/toddlers	35 (62.5%)	21 (37.5%)
Wash hands after defecating/urinating	21 (37.5%)	35 (62.5%)
Wash hands after contact with animals	19 (33.9%)	37 (66.1%)

Table 5. Relationship between WASH (Drinking Water Source, Drinking Water Quality, Latrine Ownership, Hand Washing Habit) and *Stunting* in the Merakurak Health Center Working Area with Number of Respondents (n = 56)

Indicators	Short		Very Short		p-values
	n	%	n	%	
Source of Drinking Water					
Protected	33	58.9	5	8.9	0,39
Unprotected	14	25	4	7.2	
Physical Quality of Drinking Water	N	%	N	%	
Qualify	36	64.3	7	12.5	0.93
Not Eligible	11	19.6	2	3.6	
Latrine Ownership	N	%	N	%	
Have Healthy Latrines	18	32.1	0	0	0.024
Don't Have Healthy Latrines	29	51.8	9	16.1	
Hand Washing Habits	N	%	N	%	
Good	15	26.8	0	0	0.048
Not God	32	57.1	9	16.1	

IV. DISCUSSION

According to the findings of the research, there is no significant association between drinking water sources and stunting in the short category. According to the findings of this study, the majority of respondents used protected drinking water sources, namely The Local Water Supply Utility (called PDAM) water and mineral water. This is consistent with Sinatrya and Muniroh [9] findings that there is no significant association between drinking water sources and stunting. In contrast to the findings of Maharani, et al. [10], there is a significant relationship between the source of drinking water and the incidence of stunting in toddlers, which is caused by toddlers having a lot of unprotected drinking water sources because the distance from sewage disposal is 10m, while 17 percent of the distance from water sources to septic tanks or sewage pits met the health requirements of 11 metres or more. Furthermore, the family's source of clean water is linked to the sanitation of clean and healthy water sources, with consumption of clean and healthy water sources lowering the risk of disease caused by diarrhoea or intestinal worms [11]. This is because the Merakurak Public Health Center's working area's supplies of drinking water for the population rely primarily on the Local Water Supply Utility and bottled/refillable mineral water. After all, the community has begun to be concerned about clean water supplies,

which have an impact on the health of individual families. However, it was demonstrated in this study that there was no association between the incidence of stunting and numerous relevant factors such as toilet ownership and hand-washing behaviours.

The results show that there is no significant relationship between the physical quality of drinking water and stunting in the Merakurak Health Center, Tuban Regency. The quality of drinking water used by the public uses drinking water that meets the requirements. The results of this study are in line with research conducted by [12] in the working area of the Kotakulon Public Health Center, Bondowoso Regency and Putri, et al. [13] that household factors cause acute respiratory infection among children 6-35 months in Indonesia. The study explained that there was no significant relationship between the quality of water and sanitation and the incidence of stunting in toddlers. The physical quality of drinking water must meet health requirements, namely not cloudy/clear, tasteless, odourless, not contaminated with chemicals and free from various microorganisms that can cause children to experience stunting [14]. The physical quality of drinking water is also closely related to the water source used by the respondent. If the drinking water comes from protected water, it will not affect the taste, smell, colour or turbidity of the water. Although some respondents used drinking water that did not meet the requirements, namely well water, some respondents used drilled well water. Drilled well water is included in the groundwater category, where the deeper the soil is drilled, the better the quality of the water obtained. However, the lack of groundwater is that it contains dissolved particles such as calcium, magnesium, manganese, iron, sulphate and chloride in high amounts which are not good for health. Therefore, well water is included in the category of water that does not meet the requirements.

The research that has been conducted shows a significant relationship between toilet ownership and stunting in the short toddler category. The majority of respondents in the working area of the Merakurak Health Center do not have healthy latrines. This is in line with research conducted by [15] that there is a relationship between latrine ownership and stunting caused by poor sanitation, namely the use of latrine facilities starting from latrine ownership, type of latrine, latrines not using septic tanks, latrine cleanliness, the behaviour of open defecation and disposing of stools not in the latrine can cause infectious diseases in infants. Infectious diseases accompanied by diarrhea and vomiting can cause children to lose fluids and several nutrients because children who experience diarrhea will experience malabsorption of nutrients and loss of nutrients and if they are not immediately followed up and balanced with appropriate intake, they will become short toddlers/fail to thrive [16].This is because many latrines owned by the community in the working area of the Merakurak Health Center do not comply with the requirements for healthy latrines, especially in the construction of waste disposal and septic tank ownership. Waste from the latrines is not stored in a septic tank but is channelled directly into the nearest river where if the waste from the latrines is disposed of into the river, the waste will contaminate the river which can contribute to the occurrence of infectious diseases such as diarrhea which is one of the causes of stunting in toddlers. This is due to the lack of land for the manufacture of septic tanks and the low economic level of residents. So, it can be said that employment status can determine a person to improve family sanitation through owning a latrine and building a septic tank.

In this study, there was a significant relationship between handwashing and stunting in toddlers in the stunted category, namely with a z-score <-2 SD in the working area of the Merakurak Health Center, Tuban Regency because there are more bad hand-washing habits than good hand-washing habits. This is in line with research conducted by Ahmadi, et al. [17] which was conducted in the city of Tanjung Pinang. The study explained that there is a relationship between the habit of washing hands and the incidence of *stunting* because the habit of washing hands with soap, especially after defecating, after disposing of children's feces, and before eating will shorten the chain of transmission of infectious diseases that cause diarrhea in children. The behaviour of the community's hand-washing habits is still not good, this is because many people in the Merakurak Health Center work area wash their hands only using running water because they think that if their hands have been washed with water then their hands are clean, even though without using

soap, bacteria and germs the cause of the disease can still stick to the hand. This can affect the occurrence of *stunting* because the habit of washing hands affects the personal hygiene of toddler caregivers, namely mothers where mothers interact more often with toddlers. In addition, there are still many people who do not wash their hands after contact with animals, where we know that animals can easily and quickly spread disease to humans through feces, hair, skin, food and the environment in which the animal is located, even though the animal looks healthy and clean. This is due to a lack of knowledge regarding how to wash hands properly and properly and education regarding Clean and Healthy Living Behavior (PHBS) in households, one of the indicators of which is washing hands with soap and clean water, which is very important so that family members get used to it. to adopt healthy living habits and children can grow up healthy and with adequate nutrition.

V. CONCLUSIONS

This study concludes that sources of drinking water (water) are not related to stunting in toddlers. This is because the source of drinking water for the community in the working area of the Merakurak Public Health Center uses more protected water and the community has started to care about the clean water source they use which has an impact on the health of individual families. On the physical quality of drinking water, there is no significant relationship between stunting and the quality of drinking because people use drinking water to meet the requirements. Ownership of a latrine (sanitation) has a significant relationship with stunting. Latrines that do not use septic tanks, clean latrines, open defecation behaviour and disposal of children's feces not in the latrines can cause infectious diseases in toddlers which can lead to stunting in toddlers. The habit of washing hands (hygiene) has a significant relationship with stunting, the majority of respondents have poor hand-washing habits, and the average cause of respondents' hand-washing habits being poor is not washing their hands after contact with animals and washing hands without using soap.

This study suggests that it is necessary to periodically increase communication, information and education (IEC) activities for mothers of toddlers led by cadres at every integrated healthcare center meeting. Health workers, especially nurses, midwives or nutritionists can provide explanations to parents of babies and prospective parents regarding the importance of the 6 steps of washing hands properly and correctly in the hope that this can be effective in reducing the incidence of stunting in Indonesia.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

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Self-Efficacy and Affect to Prevent Stunting Among Father in the Coastal Area of Surabaya

Ilya Krisnana[1], Aria Aulia Nastiti[1], Denela[1]

Abstract--- The incidence of stunting in toddlers in Indonesia is a health problem that needs to be addressed immediately, as can be seen from the stunting rate which is still above the WHO standard, which is 24.4%. The important role of parents, one of which is the father in taking action to prevent stunting in children by providing balanced nutrition. However, research discussing the role of fathers in stunting prevention behavior is still very limited. The purpose of this study was to explain the relationship between father's self-efficacy and affect with stunting prevention behavior in toddlers. The design of this research was cross sectional. The samples was 313 father's toddler using cluster random sampling. The independent variable in this study was self-efficacy and father's affect. The dependent variable in this study was stunting prevention behavior, with sub chapters on the variables of food diversity and eating frequency. Data collection used the Self-Efficacy for Exercise (SEE) scale questionnaire for self-efficacy, The Physical Activity Enjoyment Scale (PACES) for affect, and a questionnaire of food diversity and eating frequency that adopts from SDKI module 2017. And analyzed with the Spearman's Rho with a significance level of p<0.05. The results showed that there was a relationship between self-efficacy (p=0.000 ;r=0.226) and affect (p=0.049;r=0.112) on stunting prevention behavior in a variety of foods. There is no relationship between self-efficacy (p=0.396 ;r=0.048) and affect (p=0.653;r=0.025) on stunting prevention behavior on eating frequency. The need for further intervention for fathers to increase understanding of information about eating frequency in children.

Keywords—*self-efficacy; affect, stunting; father; coastal area*

I. INTRODUCTION

The incidence of stunting in toddlers is a health problem that needs to be addressed immediately. Judging from their condition, stunted children will usually have bodies that are shorter or stunted than children of their age [1]. This happens because of a lack of balanced nutritional intake during pregnancy or the first 1000 days of life, so that it can hamper the child's growth process[2] . The incidence of stunting in toddlers is a health problem that needs to be addressed immediately. Judging from their condition, stunted children will usually have bodies that are shorter or stunted than children of their age [1]. This happens because of a lack of balanced nutritional intake during pregnancy or the first 1000 days of life, so that it can hamper the child's growth process [2].

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Community perceptions regarding the role in fulfilling balanced nutrition for children are still borne by mothers, but basically the role of fathers is also very important in fulfilling balanced nutrition for children[3]. This statement is in accordance with Rohmah's research (2018) that fathers' participation in fulfilling children's nutrition can be in the form of providing assistance in preparing meals for children, feeding children, and eating together with children. Research discussing the role of fathers in stunting prevention behavior is still limited. The involvement of fathers in caring for children can have a positive impact on the growth and development of children [4].

Efforts to prevent stunting require good self-efficacy as a form of nutrition fulfillment behavior in children. Good self-efficacy will support the formation of a behavior and improve health[5]. *The Health Promotion Model* (HPM) theory identifies that health promotion behavior can occur because of the cognitive influence of self-efficacy and affect. So that stunting prevention behavior carried out by fathers is one of the health promotion efforts.

The incidence of stunting in the world is still in the high category, this is in accordance with data from the 2018 Global Nutritional Report that the incidence of stunting occurs as much as 22.2% or 150.8 million children are stunted. [6][6]. Meanwhile, the prevalence of stunting in Indonesia, based on the results of the Indonesian Nutrition Status Survey (SSGI) in 2021, decreased by around 6.4% from 2018, starting from 30.8% to 24.4%. However, this is still above the figure limit set by WHO, which is 20% [7]. Of the 18 provinces in Indonesia that have stunting, the province of East Java ranks second with the most stunting in toddlers. It is estimated that 23.5% or 653 thousand toddlers will experience stunting by 2021[8]. The city of Surabaya is in the top 10 out of 18 cities/regencies in East Java with the highest prevalence of stunting in toddlers. Based on the results of the SSGI (Indonesian Nutrition Status Survey), the prevalence of stunting in toddlers in the city of Surabaya is around 28.9%[7]. There are several areas in the city of Surabaya that have the highest prevalence of stunting based on data from the Health Profile of the City of Surabaya in 2019, including the Kenjeran Health Center with 21.77%, Pegirian Health Center with 17.96%, Tanah Kali Kedinding Health Center with 11.82%, Community Health Center Bulak Banteng as much as 10.68%, and the Tambak Wedi Health Center as much as 9.89% [9].

Geographically, Indonesia is an archipelagic country which has almost 70% of its territory consisting of oceans which have various sources of protein that can be consumed[10]. The source of protein needed can vary, be it animal protein or vegetable protein. In coastal areas that are rich in potential marine catches, you can optimize consumption of animal products as one of fulfilling protein needs which can reduce stunting rates in children (Nirmala & Octavia, 2022) . However, the average family in this coastal area still does not consider the nutritional content they consume, especially the nutritional intake for children is not paid much attention to by their parents[12].

One effort that can be done as a parent is to increase understanding of good nutritional intake for children. According to research conducted by Andriyani and Werdani (2021) that self-efficacy can estimate a person's ability to carry out a task, feel confident in his abilities and have motivation for the future. So that this can increase attitudes to prevent stunting to the fullest[13]. In addition, research conducted by Nugroho et al (2021) states that a person's level of knowledge is an important factor in increasing self-efficacy, if a person has high knowledge then self-efficacy someone will also be tall[14]. Self-efficacy affect affect or feelings that will be generated after the action is given. The purpose of this research is to explain the relationship between self-efficacy and affect fathers with stunting prevention behavior in toddlers in the coastal area of Surabaya.

II. METHOD

This research is a quantitative study with a cross-sectional approach . The population in this study were fathers who had toddlers in the coastal area of East Surabaya, Kenjeran District, to be precise at the Kenjeran Health Center, Tanah Kali Kedinding Health Center, Bulak Banteng Health Center, Tambak Wedi Health Center and Pegirian Health

Center. The sample size in this study was 313 toddler fathers with inclusion criteria being able to read and write and their children were in good health. The sampling technique uses cluster random sampling, where the samples are grouped based on the population area, then the researcher will choose randomly in determining the sample to be used.

Retrieval of data using a questionnaire The Self-Efficacy for Exercise (SEE) scale for self-efficacy, The Physical Activity Enjoyment Scale questionnaire (PACES) for affect, and the dietary diversity and eating frequency questionnaire adopted from the 2017 IDHS module for stunting prevention behavior . Data analysis used the Spearman-rho correlation test with a significance degree of $p < 0.05$. This research has passed ethics from Faculty Health Research Ethics Committee Airlangga University Nursing, Surabaya with Number 2594-KEPK.

III.   RESULT

Table 1. Characteristics of Respondents

Characteristics	Frequency	(%)
Father's age		
14-19 years	3	(1)
20-40 years	259	(82.7)
41-60 years	51	(16.3)
Father's Education		
Elementary School	41	(13.1)
Junior High School	69	(22)
Senior High School	182	(58.1)
College	21	(6.7)
Father's occupation		
Farmer	2	(0.6)
Private-employed	215	(68.7)
Self-employed	76	(24.3)
Civil servant	2	(0.6)
TNI/Polri	1	(0.3)
Fisherman	17	(5.4)
Number of children		
1	94	(30)
2	121	(38.7)
3	67	(21.4)
>3	31	(9.9)
Child Age		
1-12 months	108	(34.5)
13-36 months	205	(65.5)
Gender of Child		
Girl	148	(47.3)
Boy	165	(52.7)

Table 1 shows that the majority of the respondents fathers are in the early adult range (20-40 years) as many as 259 people (82.7 %). Most of the respondents education was further education as many as 182 people (58.1 %). Most of the respondents jobs were private sector workers, 215 people (68.7 %), and almost half of them had 2 children,121 people (38.7%). Most of the child respondents were in the toddler age range (13-36 months) as many as 205 children(65.5 %) and the majority were boy as many as 165 children (52.7%).

Table 2 Relationship between father's self-efficacy and affect with stunting prevention behavior (dietary diversity)

Variable		Stunting Prevention Behavior (Diversity of food)				
		Not good	(%)	Good	(%)	∑ (%)
Self-Efficacy	Low	0	(0)	9	(2.9)	9 (2.9)

	Currently	4	(1.3)	93	(29.7)	97 (31)
	Tall	3	(1)	204	(66.2)	207 (66.1)
	Total	7	(2.2)	306	(97.8)	313 (100)
	Spearman's rho p = 0.000 ; r= 0.226					
Affect	Negative	6	(1,9)	135	(43.1)	141 (45)
	Positive	1	(0.3)	171	(54.6)	172 (55)
	Total	7	(2.2)	306	(97.8)	313 (100)
	Spearman's rho p = 0.049; r= 0.112					

Table 2 showed that most of the respondents' self-efficacy, namely 204 people (65.2 %) had high self-efficacy showing stunting prevention behavior with good food diversity. Whereas for respondents who had moderate self-efficacy and demonstrated stunting prevention behavior with a good variety of foods, there were 93 people (29.7 %).

Data analysis of father's self-efficacy variable on stunting prevention behavior with food diversity using the *Spearman rho statistical test* has a *p value* = 0.000, indicating that there is a relationship between father's self-efficacy on stunting prevention behavior and food diversity. When viewed from the value of the *Spearman rho* correlation coefficient of 0.226, it means that it has a positive direction with a weak degree of strength.

Most of the respondents' affect, namely 171 people (54.6 %) had positive affect and demonstrated stunting prevention behavior with a good variety of foods. Meanwhile, almost half of the respondents, namely 135 people (43.1 %) had negative affect, but had stunting prevention behavior with a good variety of foods.

Data analysis of father's affect variable on stunting prevention behavior with food diversity using the *Spearman rho statistical test* has a p value = 0.049, indicating that there is a relationship between father's affect on stunting prevention behavior and food diversity. If seen from the value of the *Spearman rho* correlation coefficient of 0.112, it means that it has a positive direction with a very weak degree of strength.

Table 3. Relationship between father's self-efficacy and stunting prevention behavior (eating frequency)

Variable		Stunting Prevention Behavior (Eating Frequency)				
		Not good	(%)	Good	(%)	∑ (%)
Self Efficacy	Low	4	(1.3)	5	(1.6)	9 (2.9)
	Currently	34	(10.9)	63	(20.1)	97 (31)
	Tall	58	(18.5)	149	(47.6)	207 (66.1)
	Total	96	(30.7)	217	(69.3)	313 (100)
	Speaman's rho p = 0.396 ; r= 0.048 ;					
Affect	Negative	46	(14,7)	95	(30.4)	141 (45)
	Positive	50	(16)	122	(39)	172 (55)
	Total	96	(30.7)	217	(69.3)	313 (100)
	Spearman's rho p = 0.653; r= 0.025					

Table 3. showed that almost half of the respondents' self-efficacy, namely 149 people (47.6%) had high self-efficacy and demonstrated stunting prevention behavior with good eating frequency. Meanwhile, a small portion of the respondents, namely 63 people (20.1 %) had moderate self-efficacy and demonstrated stunting prevention behavior with good eating frequency.

Data analysis on father's self-efficacy variable with stunting prevention behavior and eating frequency used *the Spearman Rho* statistical test with p = 0.396, which means that there is no relationship between father's self-efficacy on stunting prevention behavior and eating frequency. When viewed from the value of the *Spearman rho* correlation coefficient of 0.048, it means that it has a positive direction with a very weak degree of strength.

Nearly half of the respondents' affect, namely 122 people (39%) had positive affect and demonstrated stunting prevention behavior with good eating frequency. Meanwhile, a small portion of the respondents, namely 46 people (14.7 %) had negative affect and demonstrated stunting prevention behavior with unhealthy eating frequency.

Analysis of data on father's affect variable on stunting prevention behavior with eating frequency using *the Spearman Rho* statistical test has a p value = 0.653, which means there is no relationship between father's affect on stunting prevention behavior and eating frequency. When viewed from the value of the *Spearman rho* correlation coefficient of 0.025, it means that it has a positive direction with a very weak degree of strength.

IV. DISCUSSION

Based on the results of the study, the majority of respondents had high self-efficacy and stunting prevention behavior on a good variety of foods. Stunting prevention behavior carried out by fathers is in the form of helping to prepare food or drinks for children with at least four food menu groups, including staple food groups, animal, fruit & vegetables and other foods. Introducing a variety of foods that are healthy, safe and balanced for children requires good faith that fathers are able to meet dietary needs that are suitable for children (Ernawati et al., 2016) .

Good self-efficacy can motivate someone to be able to engage in a behavior that they believe they are capable of doing[16]. In addition, high self-efficacy can help carry out a task independently[17]. Individuals who have high self-efficacy have good confidence that they are able to carry out preventive behavior[18]. Preventive behavior is an action taken by someone to improve health as an effort to prevent stunting in a variety of foods[19]. The diversity of food consumed can help toddlers avoid stunting , the intake given can be in the form of green vegetables and fruit rich in vitamin A, other types of vegetables and fruit, nuts and milk[20].

In this study the aspect of father's self-efficacy that is most felt is the existence of a strong strength of belief, where fathers feel able to prevent stunting in children even in certain situations or conditions. Therefore, fathers are able to participate in preparing food or drink according to the needs needed by the child. According to Rohmah's research [21] that good father participation in providing this type of food can be seen from the level of knowledge possessed by the father. Thus, the existence of a good level of knowledge can have an influence on a person's self-efficacy, so that it can encourage stunting prevention behavior in a variety of foods.

Based on the results of the study that there is no relationship between self-efficacy and stunting prevention behavior on eating frequency. This means that the high self-efficacy possessed by fathers does not encourage fathers to carry out stunting prevention behavior at eating frequency.

Self-efficacy is formed by the presence of knowledge, attitudes, high self-esteem, sufficient ability, and confidence and trust to make decisions in an action, especially preventive behavior[22]. In this case, the practice of feeding children is one of the stunting prevention behaviors in children, where parents will provide food intake according to the recommended minimum meal frequency [23]. Minimum eating frequency is seen based on age range and breastfeeding. If a toddler is still getting exclusive breastfeeding, the recommended minimum frequency of eating is 3 times a day, and for toddlers who are not getting exclusive breastfeeding, the recommended frequency of eating is at least 4 times a day, be it solid or semi-solid food (WHO, 2008). .

In this study, fathers had high self-efficacy but did not engage in stunting prevention behavior at eating frequency. This can be influenced by the father's occupation, in which most fathers work as private employees, so they do not know how many times their children eat each day. Therefore, this can affect stunting prevention behavior on eating frequency. According to research by [24] that a father's job can influence the father's role in providing nutritional fulfillment to children. This happened because the father focused more on his work as a form of responsibility to meet economic needs.

Based on the results of the study, it was found that the majority of respondents had positive affect and had stunting prevention behavior on a good variety of foods. Stunting prevention behavior carried out by fathers is in the form of helping to prepare food or drinks for children with at least four food menu groups, including staple food groups, animal, fruit & vegetables and other foods.

Affect is related to attitude, where attitude is a feeling reaction that has a positive or negative assessment of an object. Affect or attitude related to activity is a subjective feeling that is experienced before and during an action whether it is positive or negative, interesting, fun, or does not tend to influence a person to maintain that behavior [16]. In this case the behavior that can be developed is stunting prevention behavior that can be carried out by a father. One of them is being able to help prepare a variety of foods for children. Food diversity is a group of foods consumed for 24 hours that can be relied upon as food sufficiency for children[25].

Stunting prevention behavior in a variety of foods has a positive impact because it is influenced by a commitment that has been believed. So that this positive behavior will continue. This can also be influenced by good knowledge and self-confidence to carry out stunting prevention behavior . According to Mutingah & Rokhaidah's research , (2021) that there is meaning between attitudes and stunting prevention behavior , where the more positive the attitude is, the better it will be in preventing stunting [26] .

Stunting prevention behavior on eating frequency. This means that the more positive affect felt by the father does not make the father to carry out stunting prevention behavior at eating frequency. Affect is a subjective feeling that appears before, during and after a behavior based on the existence of a stimulus from oneself. The resulting feelings can affect whether the individual will repeat the same behavior or repeat the old behavior [27]. In this case the behavior that can be developed is stunting prevention behavior at eating frequency. The frequency of eating is seen based on the age range and breastfeeding. If a toddler is still getting exclusive breastfeeding, the recommended minimum frequency of eating is 3 times a day, and for toddlers who are not getting exclusive breastfeeding, the recommended frequency of eating is at least 4 times a day, be it solid or semi-solid food (WHO, 2008). .

In this study it can be seen that fathers who have positive affect do not practice stunting prevention behavior at eating frequency properly. This can be influenced by emotions such as trust, interest and hope that have not been implemented to take action to prevent stunting at eating frequency. In addition, affect has a relationship with self-efficacy, if a person's self-efficacy is high then the resulting affect is positive. Thus that the existence of beliefs can influence a person's affect in taking action to prevent stunting on eating frequency.

V. CONCLUSION

Most fathers' self-efficacy in carrying out stunting prevention behaviors in toddlers is mostly high. The effect of fathersin carrying out stunting prevention behavior in toddlers is mostly positive. Father's self-efficacy can have an influence on stunting prevention behavior on a variety of foods, but in stunting prevention behavior on eating frequency it does not have an effect on self-efficacy. Father's affect can have an influence on stunting prevention behavior on a variety offoods, but in stunting prevention behavior on eating frequency does not have an effect on affect.

CONFLICT OF INTEREST

No conflicts of interest have been declared

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The Relationship Between Lifestyle, Dietary Habit, and Physical Activity with the Occurrence of Hypertension in the Elderly in Melayang Hamlet, Sahan Village, Seluas District, Indonesia

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Abstract--- *Introduction: hypertension is a primary risk factor for death in stroke patients and ischemic heart disease patients caused by lifestyle and diet in Indonesia. Purpose: this study aims to determine the relationship between lifestyle, diet, and physical activity with the incidence of hypertension in the elderly in Melayang Hamlet, Sahan Village, Seluas District. Methods: this study used a cross-sectional design that linked lifestyle variables (smoking habits, physical activity, alcohol, and coffee consumption) and diet with the incidence of hypertension. This research was conducted on 43 older adults. The data collected includes respondent's identity, condition and history of high blood pressure, blood pressure, behavior/lifestyle, physical activity questionnaire (GPAQ) which was adopted from the World Health Organization STEPwise approach to NCD risk factor Surveillance, consumption and diet (Recall 3 x 24 hours and FFQ), and anthropometric data). Results: this study shows that there is a significant relationship between coffee consumption and the incidence of hypertension in the elderly with a p value = 0.062 (a> 0.05), and there is a significant relationship between the consumption of alcoholic beverages and the incidence of hypertension in the elderly with a p value = 0.044 (α = 0.05). However, there is no significant relationship between smoking and the incidence of hypertension in the with a p value of 0.103 (a > 0.05). Recommendation: The finding of this study be utilized as a guideline to the policymakers, community health canter, health worker, nurse, educators, family, and researcher to determine areas to improve hypertension prevention.*

Keywords-- *Hypertention, lifestyle, Dietery Habit, Physical Activity, Elderly*

I.   INTRODUCTION

Hypertension is a significant cause of cardiovascular disease and death worldwide [1]. The impact of economic growth, trade liberalization, and economic globalization, hypertension which was initially a significant disease in developed countries, has now become a primary non-communicable disease in low- and middle-income countries (LMICs) [1]. The problem of hypertension is made even grimmer because, in LMICs, only a third of those with hypertension are aware that they have hypertension [2].

The problem of hypertension in Indonesia is no better, even worse than the global situation. According to

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Riskesdas (2018) [3] , the national prevalence of hypertension is 8.36% based on a doctor's diagnosis and 34.11% based on direct measurements. This prevalence rate is similar to that reported by Peltzer & Pengpid (2018) [4], based on data from the Indonesia Family Life Survey (IFLS-5), which is 33.4%. Based on the 2018 Riskesdas data, the prevalence rate still shows an increasing trend from year to year [3]. A global epidemiological study reported in 2014 found that compared to 1980, deaths from hypertension in 2010 in Indonesia increased dramatically from rank 13 to rank 5 [5]. It is also known that in Indonesia, most patients with hypertension also have comorbidities [6].

However, Peltzer & Pengpid, in 2018, said that the prevalence of hypertension based on the geographical distribution in Indonesia shows an uneven distribution [4]. The province with the highest prevalence was the province of South Kalimantan (44.1%), and the province with the lowest prevalence was the province of Papua (22.2%). This difference in prevalence between regions appears to be influenced by socio-demographic factors, behavior, physical condition, and history of other diseases [3].

Hypertension or increased blood pressure is a significant risk factor for death from cardiovascular diseases (ischemic heart attack, ischemic stroke, hemorrhagic and non-hemorrhagic stroke, and hypertensive heart disease), chronic kidney disease, and other cardiovascular diseases [7]. In 2010, hypertension contributed to 46% of deaths from these diseases [7]. Hypertension is reported to be associated with the inflammatory marker highly-sensitive C-reactive protein [8].

Besides being influenced by factors that cannot be modified, such as genetics, ethnicity, age, and gender, hypertension is also influenced by modifiable factors, such as consumption, such as salt; smoking, low physical activity, heavy alcohol consumption [9] [10] [11]. Alternatively, hypertension is the result of the interaction of potential genetic factors and the influence of environmental factors, interactions of salt-rich foods with a genetic constitution [12], or interactions of gut microbes with genetics [13] [14], or the operation of consumption factors food through epigenetic mechanisms [15] [16] [17].

Several studies show that among the modifiable factors, eating habits [18], those who smoke daily (daily smokers), heavy alcohol drinkers, and obesity are strongly associated with hypertension [6] [19] [20] [21] [22] Obesity is reported as an essential determinant of hypertension [19], and central obesity, as reported in Indonesia strongly associated with hypertension [8].

Socio-economic conditions and social determinants are thought to influence the incidence of hypertension [8] [20]; likewise, village-urban contests and or coastal or non-coastal areas can be local factors that affect the hypertension of its citizens [23] [24] [25] [26].

Based on the background above, this study wanted to determine whether there is a relationship between lifestyle, eating patterns, and physical activity with the incidence of hypertension in the elderly in Melayang Hamlet, Sahan Village, Sejuang District, and West Kalimantan

II. METHOD

This study used a quantitative method with a cross-sectional study design to determine the relationship between lifestyle, diet, and physical activity with the incidence of hypertension in the elderly. This research was conducted in Melayang Hamlet, Sahan Village, Sejuang District, West Kalimantan, in May 2021 - September 2021, with 43 older adults. The research sample was taken based on the inclusion criteria for the elderly, namely aged > 60 years, coming from the hamlet of Drifting, Sahan Village, Sejuang District, willing to be a respondent, and living with family. The data collection process for this study used several research instruments, namely: 1) profiles of the

elderly consisting of gender, marital status, age, last education, current illnesses, health checks for the last 3 (three) months by health workers, and consumption medication last three months; 2) a blood pressure history questionnaire consisting of the frequency of suffering from high blood pressure, the frequency of checking blood pressure, and measurement of systolic and diastolic blood pressure; 3) a smoking behavior questionnaire consisting of 5 (five) questions; 4) alcohol consumption questionnaire consisting of 4 (four) questions; 5) coffee consumption questionnaire consisting of 5 (five) questions. Univariate data analysis was performed on each variable, while bivariate analysis was performed using the chi-square statistical test using the SPSS program, with a significant level of p=0.05 (95% confidence level).

III. RESULT

The results of this study (Table. 1) describe the characteristics of 43 older adults in Melayang Hamlet who were the respondents of this study. Their ages ranged from 60-80 years, but generally 60-65 years (51%); did not finish elementary school about 25 person (58%). Interestingly, 35% of the respondents were widows and 7% of the respondents widowers, and married (58%).

Table 1. Distribution of Respondents by Gender, Status, Age, Education, and Occupation

Variablese	N	%(Percentage)
Gender		
Male	17	40
Female	26	60
Status		
Widow	15	35
Married	25	58
Widower	3	7
Age		
60-65 year	22	51
66-70 year	11	26
71-75 year	5	12
76-80 year	5	12
Education		
Elementary School	14	33
Did not finish elementary school	25	58
Senior High School	1	2
Diploma/Bachelor Degree	3	7
Total	43	100%

The results of this study (Table 2) describe the health conditions of respondents in Melayang Hamlet, where the most frequently suffered are hypertension, namely 18 people (42%), gout by ten people (23%), joint pain by seven people (16 %), rheumatism one person (2%), ulcer two people (5%), cholesterol three people (7%), while diabetes mellitus one person (2%). Data on respondents' health checks for the last three months by health workers in Melayang Hamlet 31 people (72%) had their health checked by health workers, while 12 people (28%) did not have their health checked. Table 2 data also shows a history of drug consumption in the last three months; 35 people (81%) of respondents took medicine for a disease that suffered from these 35 people, 29 people (67%) took medicine with a doctor's prescription, while six other people took drug stalls without doctor's prescription.

The results of this study (Table 3) describe the condition and history of the respondents' blood pressure in Melayang Hamlet, the frequency of respondents having high blood pressure in the last year is around five people (12%), two people (5%) have suffered from hypertension since two years, three years one person (2%), four years two people (5%), five years three people (7%), >5 years four people (9%). Respondents in Melayang Hamlet, the most

percentage of which around 19 people (44%) have never checked their blood pressure. In comparison, 12 people (28%) checked their blood pressure moderately, and 12 others (28%) checked it occasionally. Based on systolic and diastolic blood pressure measurement data, the respondents in Melayang Hamlet were at most 12 people (28%) had grade 1 hypertension, ten people (23%) had grade 2 hypertension, 11 people (26%) had pre-hypertension, and ten people (23%) did not have hypertension.

Table 2. Health Conditions of Elderly Respondents in Melayang Hamlet

Disease Variables	N	% (Percentage)
Current illness		
Hypertension	18	42
Gout	10	23
Joint pain	7	16
rheumatism	1	2
Indigestion	2	5
Cholesterol	3	7
Diabetes mellitus	1	2
Medical examination for the last three months by a health worker		
Yes	31	72
No	12	28
Drug consumption in the last three months		
Yes	35	81
No	8	19
Doctor's prescription	29	67
Drugstore without a prescription	6	14

Table 3. Condition and history of blood pressure

Variable	N	%
Frequency of suffering from high blood pressure		
1 year	5	12
2 year	2	5
3 year	1	2
4 year	2	5
5 year	3	7
>5 year	4	9
Frequency of checking blood pressure		
Often	12	28
Sometimes	12	28
Never	19	44
Systolic and diastolic blood pressure measurement		
Systolic normal < 120 diastolic <80	10	23
Pre-systolic hypertension 120-139 , diastolic 80-89	11	26
systolic grade 1 hypertension 140-159, diastolic 90-99	12	28
Systolic grade 2 hypertension 160->160, diastolic 100->100	10	23

Source (JNC, 2003)

The results of this study (Table 4) describe the distribution of respondents based on the Body Mass Index category. Respondents in Melayang Hamlet with the highest percentage having normal nutritional status were 25 people (58%). In comparison, respondents with thin nutritional status were nine people (21%), eight people (19%) with obese nutritional status, and only one person (2%) respondents with obese nutritional status.

Table 4. Distribution of Respondents by Body Mass Index Category

Kriteria IMT	N	%
Thin <17,0-18,4	9	21
Normal 18,5-25,0	25	58
Fat 25,1-30,0	8	19
Obesity > 30,1	1	2

Source: Depkes (2010)

The results of this study (Table. 5) describe the smoking behavior of elderly respondents in Melayang Hamlet. Most of them (24 people, 56% smoked. The remaining 19 people (44%) did not smoke. Almost all of those who smoked smoked every day, and only four people smoked occasionally. Regarding the number of cigarettes consumed, Table 5 explains that cigarettes consumed in a day, 18 people (42%) spent 1-5 cigarettes. Six people (14%) spent > 5 cigarettes in a day Type of cigarettes used by respondents 20 people (47%) used hand-rolled cigarettes/ traditional cigarettes, and four people (9%) used modern/market cigarettes.

Table. 5 Elderly Smoking Behavior in Hamlet Melayang

Variable	N	%
Smoking Behavior		
Yes	24	56
No	19	44
Frequency Smoking		
Never	19	44
Sometimes	4	9
Every day	20	47
Many cigarettes are spent in a day		
1-5 cigarettes	18	42
>5 cigarettes	6	14
Type of cigarette used		
Hand-rolled/traditional	20	47
Modern/market	4	9
Types of Modern Cigarettes used		
Mild/white	4	9

Table. 6 Coffee consumption behavior

Variable	N	%
Coffee Consumption Behavior		
Yes	32	74
No	11	26
Coffee Consumption Frequency		
Sometimes	15	35
Every day	17	40
Never	11	26
Coffee Consumption per mL		
60-120 mL	5	12
160-185mL	10	23
190-195 mL	13	30
225->225 mL	4	9
Type of coffee consumed		
Sweet coffee	30	70
Bitter coffee	2	5
Coffee added per glass		
7 gr	15	35
14 gr	15	35
21 gr	2	5
Sugar added per glass		
20 gr	18	42
40 gr	10	23
60 gr	1	2
80 gr	1	2

The results of this study (Table. 6) describe the coffee consumption behavior of respondents in Melayang Hamlet, the majority of whom consume coffee, namely 32 people (74%), while 11 people (26%) do not consume coffee. Respondents in Melayang Hamlet have the highest percentage of smoking frequency; 17 people (40%) consume it daily, and 15 people (35%) occasionally. Data table. 6 also shows the amount of coffee consumed per mL at most 13 people (30%) consumed 190-195 mL of coffee, ten people (23%) consumed 160-165 mL of coffee, five people (12%) consumed 60-120 mL of coffee and four people (9%) consumed 225->225 mL of coffee. Type of coffee consumed by respondents three people (70%) consumed sweet coffee, and two people (5%) consumed bitter coffee. Based on data on coffee added per glass, 15 people (35%) added 7 grams of coffee, while 15 people (35%) added 14 grams, and two people (5%) added 21 grams of coffee. Sugar added per glass 18 people (42%) added 20 grams of sugar, ten people (23%) added 40 grams of sugar, one person (2%) added 60 grams of sugar, and one person (2%) added 80 grams of sugar.

The results of this study (Table 7) describe the consumption behavior of the respondents in Melayang Hamlet, the majority of whom did not consume alcoholic beverages, namely 27 people (63%). In comparison, 16 people (37%) consumed alcoholic beverages. Respondents in Melayang Hamlet have the highest percentage of consumption of alcohol, 15 people (35%) occasionally and one person (2%) every day. Table 7 also shows the number of alcoholic beverages consumed per mL at most; around seven people (16%) consumed 195 mL of alcoholic beverages, while four persons (9%) consumed 25 mL of alcoholic beverages, three persons (7%) consumed 320 mL alcoholic beverages and two people (5%) consumed 10 mL of alcoholic beverages. The type of alcoholic drink consumed by the respondents was at most 12 people (28%) who consumed alcoholic drinks of the white arak type. In comparison, three people (7%) consumed Bintang beer, and one person (2%) consumed dester-type alcoholic drinks.

Table.7 Alcohol consumption behavior

Variable	N	%
Alcohol consumption behavior		
Yes	16	37
No	27	63
Frequency of drinking alcohol		
Sometimes	15	35
Every day	1	2
Lots of alcohol consumption per mL		
10 mL	2	5
25 mL	4	9
195 Ml	7	16
320 Ml	3	7
Type of alcohol consumed		
Dester	1	2
Beer	3	7
White wine	12	28

The results of this study (Table. 8) show that the highest percentage of physical activity of respondents in Melayang Hamlet had heavy physical activity, 28 people (65%). Respondents with moderate physical activity were 11 (26%) and 4 (9%) with low physical activity.

Table .8 Respondents' Physical Activity

Physical Activity	Amount (n)	Percentage (%)
Low	4	9
Currently	11	26
Heavy	28	65
Total	**43**	**100**

The results of this study (Table 9) describe the distribution of foodstuffs for one year based on the frequency most often consumed by respondents in Dusun Melayang in the week of cereals and tubers with mean = 50.67, SD = 30.0, min = 7, 1 and max= 121.4. Vegetable protein and its derivatives with average = 7.0, SD = 8.4, min = 0.0, and max = 44.9. Meat, poultry, and processed products with average = 6.41, SD = 8.3, min = 0.0, max = 34.3. Fish and processed products with mean=12.76, SD=22.6, min=0.0, max=120. Vegetables with mean=8.41, SD=10.9, min=0.0, max= 50. Fruits with mean=13.08, SD=14.5, min=0, 0, max=50. Milk and processed drinks with average = 19.39, SD = 17.2, min = 0.0, max = 81.4. Oils and fats with mean=1.40, SD=3.7, min=0.0, max=19.3. They processed food, cakes, and snacks with average=16.7 SD=39.5, min=0.0, and max=250.

Table 9. Distribution of food ingredients for one year based on the frequency most often consumed by Respondents

Food sources	FFQ (g/ week)					
	Average	±	SD	Min	±	Max
Cereals and tubers	50,67	±	30,0	7,1	±	121,4
Cereals and tubers	7,0	±	8,4	0,0	±	44,9
Meat, poultry and their preparations	6,41	±	8,3	0,0	±	34,3
Fish and its preparations	12,76	±	22,6	0,0	±	120
Vegetables	8,41	±	10,9	0,0	±	57,1
Fruits	13,08	±	14,5	0,0	±	50
Milk and processed drinks	19,39	±	17,2	0,0	±	81,4
Oil and fat	1,40	±	3,7	0,0	±	19,3
Prepared food, cakes and snacks	16,7	±	39,5	0,0	±	250

The results of this study were based on data (table.10), the distribution of respondents' food intake in Melayang Hamlet based on a 3x24-hour recall with an average Vit B1 intake = 210.27, SD = 1237.27, min = 8.33, and max = 8366.6. Average iron = 84.64, SD = 361.36, min = 13.75 and max = 2397.77. Vit A with average = 31.83, SD = 17.46, min = 0.21 and max = 93.64. Average protein = 29.34, SD = 13.02, min = 13.79 and max=73.75. Fat with mean=28.98, SD=17.02, min=7.77 and max=103.6. Energy with mean=27.39, SD=10.17, min=14.50 and max=59.25. Carbohydrates with average = 25.87, SD = 10.63, min = 5.17 and max = 62.4. Phosphorus with average = 20.14, SD = 10.87, min = 4.11 and max = 62.61. Vit C with average = 13.50, SD = 8.70, min = 3.33 and max=38.44. Calcium with average = 7.62, SD = 3.65, min = 3.41 and max = 19.66.

Table. 10 Distribution of food intake for elderly respondents in Melayang Hamlet

Nutrients	Recall 3 x 24 jam					
	Average	±	SD	Min	±	Max
Energy	27,49	±	10,17	14,50	±	59,25
Protein	29,34	±	13, 02	13,79	±	73,75
Fat	28,98	±	17, 02	7,77	±	103,6
Carbohydrate	25,87	±	10,63	5,17	±	62,4
Calcium	7,62	±	3,65	3,41	±	19,66
Phosphor	20,14	±	10,87	4,11	±	62,61
Iron	84,64	±	361,36	13,75	±	2397,77
Vit A	31,83	±	17,46	0,21	±	93,64
Vit B1	210,27	±	1273,27	8,33	±	8366,6
Vit C	13,50	±	8,70	3,33	±	38,44

Table.11 Relationship between Smoking Behavior and Hypertension

Habit Smoke	Hypertension incidence in the elderly										
	Normal		Pra-HPT		HPT I		HPT II		Total		P-Value
	N	%	N	%	N	%	N	%	N	%	
Smoke	4	11	5	6	2	8	4	11	17	100	0,103
Do not smoke	6	12	6	20	10	20	6	12	26	100	
Amount	10	23	11	26	12	28	10	23	43	100	

Table 11 shows that out of 17 smoking respondents, four respondents (11%) did not have hypertension, five respondents (6%) had pre-hypertension, two respondents (8%) had grade I hypertension, and four respondents had grade II hypertension. (11%). Meanwhile, from 26 respondents who did not smoke, there were six respondents (12%) were not hypertensive, six respondents (20%) were pre-hypertensive, ten respondents (20%) had hypertension level I, and six respondents (12%) had hypertension level II. The result of the statistical test $p = 0.103$ is greater than the alpha value ($\alpha = 0.05$), meaning that there is no significant relationship between smoking and the incidence of hypertension in the elderly in Melayang Hamlet, Sahan Village, Sewide District.

Table. 12 explained that of the 26 respondents who drank coffee, six respondents (20%) did not experience hypertension, six respondents (14%) had pre-hypertension, and ten respondents (20%) had grade I hypertension. Six respondents had grade II hypertension (12%). Meanwhile, of the 26 respondents who did not drink coffee, there were four respondents (3%) did not have hypertension, five respondents (12%) had pre-hypertension, two respondents (8%) had hypertension level I, four respondents (13%) hypertension level II. Statistical test results $p = 0.062$, more significant than the alpha value ($\alpha = 0.05$), means that there is no relationship between coffee consumption and the incidence of hypertension in the elderly in Melayang Hamlet, Sahan Village, Sewide District.

Table 12. Analysis of the Relationship between Coffee Consumption Behavior and Hypertension

Coffee Consumption	Hypertension Incidence in the Elderly										P-Value
	Normal		Pra-HPT		HPT I		HPT II		Total		
	N	%	n	%	N	%	N	%	N	%	
Yes	6	20	6	14	10	20	6	12	26	100	0, 062
No	4	3	5	12	2	8	4	13	17	100	
Amount	10	23	11	26	12	28	10	23	43	100	

The results of this study (Table. 13) explained that out of 26 respondents consuming alcohol, six respondents (20%) did not experience hypertension, six respondents (14%) had pre-hypertension, ten respondents (20%) had stage I hypertension, and hypertension level II as many as six respondents (12%). Meanwhile, of the 26 respondents who did not drink coffee, there were four respondents (3%) did not have hypertension, five respondents (12%) had pre-hypertension, two respondents (8%) had hypertension level I, four respondents (13%) hypertension level II. The results of the statistical test $p = 0.044$, which is greater than the alpha value ($\alpha = 0.05$), mean that there is a relationship between alcohol and the incidence of hypertension in the elderly in Melayang Hamlet, Sahan Village, Sejuang District.

Table.13 Analysis of the Relationship between Alcohol Consumption Behavior and Hypertension

Alcohol consumption	The incidence of hypertension in the elderly										P-Value
	Normal		HPT		HPT I		HPT II		Total		
	N	%	n	%	N	%	N	%	N	%	
Yes	6	20	6	14	10	20	6	12	26	100	0, 044
No	4	3	5	12	2	8	4	13	17	100	
Amount	10	23	11	26	12	28	10	25	43	100	

IV. DISCUSSION

Hypertension is a severe problem and needs to be treated or prevented in the elderly in Melayang Hamlet related to hypertension management so as not to experience further complications. Research conducted by Sierra (2017) [27], systolic blood pressure and diastolic blood pressure increase with age and systolic blood pressure increase progressively until the age of 70 or 80 years, while diastolic blood pressure increases until the age of 50 or 60 years and then tend to level off or even slightly decrease. These changes are probably due to vascular stiffness and decreased

arterial compliance and cause a significant increase in pulse pressure with age. Research conducted by Jaul and Barron (2017) [28] also shows that hypertension is the most common chronic disease in older adults and is associated with a cause of death in old age. This study also found that aggressive treatment should be carried out and continued as long as it is tolerated and consistently carried out by the elderly.

Research conducted by Ramezankhani, A., Azizi, F., & Hadaegh, F. (2019) [29] found that the relationship between marital status and health outcomes varies according to gender. Never married is a risk factor for hypertension and is a significant risk factor for death in men. However, among women, those who have never been married have a lower risk of hypertension than married and widowed status. According to this study, the effect of marital status on hypertension is not fully understood. However, previous studies have explained that the effects of marital status include psychopathological factors, neuroendocrine pathways, health behaviors (physical activity, diet, and adherence), biological mediators, and immune pathways. Meanwhile, married men have better sleep, less stress, better moods, and more health than unmarried men. In addition, hypertension can also be influenced by the level of education.

This study also shows a significant relationship between the habit of drinking alcoholic beverages and the incidence of hypertension in the elderly in Melayang Hamlet. Research conducted by Rachman, Julianti, and Pramono (2011) [30]. Although there is no significant relationship between alcohol consumption and the incidence of hypertension, excessive alcohol consumption will increase the risk of hypertension in a person because alcohol increases sympathetic nerve activity, which can stimulate the secretion of corticotrophin-releasing hormone (CRH), which will eventually increase blood pressure. They were supported by research conducted by Rahmaniati and Supramono (2014) [31] on the drinking culture of the Dayak people in Kalimantan, who often consume alcoholic beverages made from fermented glutinous rice or other types of alcoholic beverages. This habit of consuming alcohol is usually only used in formal events, and some people consume it in everyday life.

However, most often, this alcohol consumption is carried out when there are special events, such as wedding ceremonies, thanksgiving celebrations, field harvest celebrations, away Dayak rituals, inauguration events, and welcoming guests of honor, as a sign of a close kinship relationship between communities, and is used for the needs of customs or religious ceremonies. The culture of drinking palm wine and other types of alcoholic beverages, for Dayak men and women, is a moral obligation because there is an opinion that if the host does not drink with the guests, it is unethical or disrespectful. Based on the results of this study, it was found that out of 43 respondents, 16 respondents consumed alcohol quite often, while 27 other people did not consume alcohol.

This study also shows that there is a significant relationship between coffee consumption habits and the incidence of hypertension because the caffeine content in coffee has a side effect on blood pressure which stimulates the secretion of corticotrophin-releasing hormone (CRH), which can increase blood pressure [32]. Coffee is one of the most widely consumed beverages in the world and is also the primary source of caffeine for most of the population. However, few know improper coffee consumption negatively impacts health [33]. The side effects of caffeine in coffee consumed in excess can cause anxiety, restlessness, nervousness, dysphoria, insomnia, excitement, psychomotor agitation, and rambling schools of thought [34]. They found that excessive coffee consumption resulted in adverse short-term cardiovascular effects (raised blood pressure, prolonged QT interval corrected for heart rate, and palpitations).

However, there is no significant relationship between smoking and the incidence of hypertension in the elderly with the results of the statistical test $p = 0.103$, which is greater than the alpha value ($\alpha = 0.05$). A study conducted by Ulfa and Wahyuni (2017) [35] found that there is no significant relationship between smoking and hypertension. However, smoking excessively and for a long time carries the risk of damaging the endothelial lining of the arteries,

causing reduced elasticity of the blood vessels and causing blood pressure increases. Research conducted by Susi and Ariwibowo (2019) [36] also said the same thing, there was no significant relationship between smoking and the incidence of hypertension, but epidemiologically, there was a relationship between smoking duration and the incidence of essential hypertension, having a risk of 2,384 times higher to experience hypertension and epidemiologically it was found that the relationship between the number of cigarettes and the incidence of essential hypertension had a 1,613 times higher risk of experiencing hypertension.

The results showed (Table 5) that the smoking behavior of the elderly in Melayang Hamlet was the most addicted to smoking, around 24 people (56%)—the smoking frequency of 24 people, only four people smoke occasionally. The types of cigarettes used by respondents were 20 people (47%) who used hand-rolled/traditional cigarettes and four people (9%) who used modern/market cigarettes. It can be concluded that smoking is one of the lifestyles of the elderly in Melayang Hamlet that needs attention to prevent diseases caused by the harmful content of the cigarette itself. Cigarettes are rolled or rolled tobacco rolled/wrapped in paper, leaves, or corn husks, the size of a little finger with a length of 8-10 cm, usually smoked by someone after the tip is burned [37]. Research conducted by Tirtosastro et al. (2010) [38] identified several hazards in cigarette content for the health of the body, such as tar, nicotine, CO, and NO gases originating from tobacco. In addition, hazardous materials are formed during planting, processing, and presentation in trade, namely fertilizer and pesticide residues, TSNA (tobacco-specific nitrosamine), B-a-P (benzo-a-pyrene), and NTRM (non-tobacco related material). In addition, the toxic chemicals in cigarettes stimulate the release of adrenaline, which causes high blood pressure [39]. So that the higher the smoking frequency of the respondent, the more severe the hypertension experienced by the respondent.

The results of this study also show that (table 9) the diet of elderly respondents in Melayang Hamlet based on the calculation of the FFQ table is obtained, the highest food sources are cereals and tubers, which is an average of 50.67 and milk and other processed drinks are 19, 39. This is due to the eating habits of the elderly in Melayang Hamlet, who often consume rice as a staple food because, like the habit of Indonesian people, they are not complete if they have not eaten rice, especially the habits the elderly Melayang Hamlet who like to consume tubers such as cassava and cassava that are burned, fried or boiled. The elderly also like processed drinks such as canned milk, which they usually drink before breakfast and when resting after a hard day's work. In the elderly, the amount of nutrients that enter needs to be adequately calculated because the amount needed by the elderly is different from the amount needed by other age stages. The elderly are not recommended to eat preserved foods or fast food. Preserved and fast food contains ingredients that are not good for the health of the elderly [40].

Other findings (Table 8) The highest percentage of elderly physical activity in Melayang Hamlet, 28 people (65%), has heavy physical activity. Respondents with moderate physical activity are 11 (26%) and 4 (9%) with low physical activity; of the physical activities of the elderly in Melayang Hamlet, such as farming, about 38 people (88%). It can be concluded that the physical activity of the elderly in Melayang Hamlet is still active. *Physical activity* is all forms of body activity/movement that cause energy expenditure, such as doing housework, shopping, gardening, or exercising [41]. For the elderly who suffer from disease disorders, adopting a healthy lifestyle according to the type of disease will significantly help control the illness they suffer (Jo et al, 2015) [42]. The presentation of the Ministry of Health of the Republic of Indonesia (2018) [43] shows that activities in the twilight provide several benefits, such as a more stable body balance, preventing of disease, and maintaining mental sharpness.

V. Conclusion

Based on the results of the study, it can be concluded that there is a significant relationship between coffee consumption with a p-value = 0.062 (α > 0.05) and consumption of alcoholic beverages with a p-value = 0.044 (α = 0.05). However, there is no significant relationship between smoking and the incidence of hypertension in the elderly in Melayang Hamlet, Sahan Village, Sewide District, with a p-value of 0.103 (α > 0.05). It is hoped that the findings of this study can be used as a guide for policymakers, community health centers, health workers, educators, families, and researchers to determine areas for improving health education: which can translate into significant improvements in the quality of health of the elderly in these areas.

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Relationship Between Self-Efficacy and Caregiver Resilience Who Cares for People with Schizophrenia

Amelia Susanti[1], Diana Arianti[2]

*Abstract---*Schizophrenic disorders cause personality changes and severe social incompatibility so that schizophrenic sufferers experience personal, social, vocational and physical discrepancies, this makes schizophrenic sufferers experience dependence on other people, especially on family members as caregivers. This study aims to see how far the relationship between self-efficacy and the resilience of families who care for clients with schizophrenia. This research was a descriptive analysis research with a cross-sectional approach. Thesampling technique in this study used purposive sampling, a sample of 114 families caring for schizophrenic clients in the Andalas sub-district in January 2023. The independent variable in this study was the self-efficacyof caregivers who cared for schizophrenics and the dependent variable was the resilience of caregivers whocared for schizophrenics. The research instrument used the Generally Self-Efficacy Scale (GSES) Questionnaire and the Connor Davidson Resilience Scale (CD-RISC) Questionnaire. The results of the study stated that 43.0% of respondents had cared for clients with schizophrenia for >9 years, and 52.7% of respondents were clients' parents, 54.4% of care givers who cared for schizophrenics had low self-efficacy, 53.5% Care givers who carefor people with schizophrenia have low resilience, and it is found that there is a relationship between self- efficacy and the resilience of caregivers who care for people with schizophrenia in Andalas sub-district Padang(p value = 0.002). The results of the study stated that care giver self-efficacy was related to care giver resilience in caring for schizophrenic patients. For this reason, it is hoped that health workers will further improve the ability of families to care for people with schizophrenia, especially for care givers through continuous health education.

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Keywords-- *Self-Efficacy; Resilience; Schizophrenia; and Caregiver*

I. INTRODUCTION

Research results state that more than 21 million people in the world suffer from schizophrenia. Schizophrenic patients have problems in terms of personal, social, work, and physical. This makes them dependent on other people, especially family members who act as caregivers [1]. The task of the family as a caregiver or what is commonly referred to as a family caregiver is to be a companion who supervises the patient while helping him take care of himself (including washing, eating, changing clothes, and taking medicine) [3]. Caregivers who are too expressive and emotional can increase the symptoms of schizophrenia and increase the risk of disease recurrence in the future [2].

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Caregivers have psychological problems with negative symptoms, such as depression. To maintain mental health, care givers need optimal resilience in order to be able to determine how well they are able to care for patients. Rojas (2015) explains that resilience is a picture of the emotional toughness of a person who has the courage and ability to adapt to life's problems, so that humans need to be able to adapt, survive, and face all difficulties in order to be able to perform difficult tasks as caregivers (care givers) [4].

Care givers need skills in increasing the resilience of new and adapting to existing ones, making their abilities flexible and responsive to the current environment with self-efficacy. Self-efficacy is described as belief in one's ability to mobilize the motivation, cognitive resources, and behaviors necessary to meet certain situational demands. Building self-efficacy is very important for developing resilience. In addition, several studies reveal a relationship between resilience and self-efficacy. Given the high prevalence of psychological pressure on caregivers, it is necessaryto conduct research on self-efficacy with the resilience of caregivers who care for schizophrenic patients.[1], [4].

II. METHOD

This research was a descriptive analysis research with a cross-sectional approach. The sampling technique in this study used purposive sampling a sample of 114 families caring for schizophrenic clients in the Andalas, sub-district in January 2023. The inclusion criteria in this study, namely: a. Caregivers who live at home with schizophrenics, b. Caregiver who still has a relationship with the sufferer, c. Caregiver who can read and write, d. Caregivers are able to communicate in the same language as researcher. The independent variable in this study was the self-efficacy of caregivers who cared for schizophrenics and the dependent variable was the resilience of caregivers who cared for schizophrenics. The research instrument used the Generally Self-Efficacy Scale (GSES) Questionnaire and the Connor Davidson Resilience Scale (CD-RISC) Questionnaire [7].

Data collection was carried out in January 2023. Data collection was carried out at the respondents' homes. The research team visited families at their homes, explained to them about the research being conducted and asked for their willingness to join as respondents. Respondents were asked to fill out the form provided. For respondents who could not read, the researcher read it to them and asked for answers from them. The average time for respondents to completethe instrument was around 20-30 minutes. All respondents who were approached agreed to participate in the research and filled out the instrument.

In data inputting and analyzing data, using the Statistical Package for the Social Science software. Univariate analysis was performed to describe the characteristics of each research variable, including the characteristics of the respondents (such as age, gender, education level, occupation, marital status, length of care, and family relationships), self-efficacy, and family resilience. Bivariate analysis describes the relationship between self-efficacy and the resilience of families who care for family members with schizophrenia. Bivariate analysis, Chi-squared test, multivariate analysis were also performed using logistic regression analysis to identify the meaning of the relationship between several independent variables and the dependent variable. Ethical clearance with assignment letter number no:004/ WK I.05-STIKes/I/2023 was obtained from the STIKes Alifah Padang Research and Community Service Unit prior to data collection.

III. RESULT

Table 1. Frequency Distribution of Respondents Based on Characteristics

Characteristics	F	%
Age		
17 years-25 years	26	22,8
26 years-45 years	45	39,5
46 years-65 years	30	26,3
>65 years	13	11,4
Sex		
Female	70	61,4
Male	25	38,6
Marital status		
Marry	95	83,3
Widow	12	10,5
Widower	7	6,2
Education		
No school	19	16,7
Graduated from elementary school	43	37,7
Middle school graduate	47	41,2
High school graduate	5	4,4

Table 2. Self-Efficacy Frequency Distribution

Self-Efficacy	f	%
Low	62	54.4
Tall	52	45.6
N	**114**	**100**

Table 3. Resilience Frequency Distribution

Resilience	f	%
Good	61	53.5
Bad	53	46.5
N	**114**	**100**

Table 4. The Relationship between Self Efficacy and Caregiver Resilience Caring for Schizophrenics

Sel-Efficacy	Resiliensi Caregiver				N		P-value
	Good		Bad				
	f	%	F	%	f	%	
Tall	45	72.6	17	27.4	62	100	
Low	15	28.8	37	71.2	52	100	**0,002**
n	**61**	**53.5**	**53**	**46.5**	**114**	**100**	

Based on the table above it explains that out of 114 respondents 45 (39.5%) respondents aged 26 years - 45 years, 70 (61.4%) respondents were female, 95 (83.3%) respondents were married, 47 (41, 2%) of respondents graduated from junior high school, 48 (42.1%) of respondents worked as traders, 49 (43.0%) of respondents had cared for clients with schizophrenia for > 9 years, and 60 (52.7%) of respondents were clients' parents.

Table 2 shows that out of 114 respondents, more than half 62 (54.4%) of respondents have low self-efficacy. Table 3 shows that out of 114 respondents, more than half 61 (53.5%) of respondents have low resilience. Table 4 shows on the results of the Chi square statistical test, it obtained a p-value of 0.002 (p <0.05) so that it was concluded

that Ho was rejected and Ha was accepted which shows that there is a relationship between self-efficacy and the resilience of caregivers who care for people with schizophrenia.

IV. DISCUSSION

Research results stated that out of 114 respondents, more than half 62 (54.4%) of respondents have low self-efficacy. The results of this study are in line with Pardede's research (2021), it was found that the majority had low self-efficacy of 67.5% and high self-efficacy of 32.5%.

The results of this study explain the low self-confidence of respondents in their knowledge. According to respondents' responses, the problem would not be resolved even though 30 respondents (26.3%) had a strong spirit and will. These respondents included 35 respondents (30.7%), 24 respondents (21.1%), and 35 respondents (30.7%) who said they could treat patients. Also, 25 respondents (21.9%) disagreed with the notion that patients would become easier because their encouragement and optimism increased [5].

According to the researcher's assumptions, self-efficacy is the belief that one can control circumstances and achieve the desired results. Poor Self-Efficacy can affect behaviors such as persistence, decision making, and approaching or completing projects. Individuals who have a high sense of self-efficacy will achieve goals more successfully. The inability to perform certain actions without hesitation is a sign of low self-efficacy. It is thought that increasing the self-efficacy of family caregivers will increase self-motivation and confidence in the rehabilitation of family members who are sick in the treatment of schizophrenia [6].

Research results stated that out of 114 respondents, more than half 61 (53.5%) of respondents have low resilience. The results of this study are in line with the research of Rafiyah et al., (2018), namely that most family resilience is classified as low (73.9%). This study shows that most families who care for schizophrenic individuals have low strength (resilience) in dealing with stress and pressure. So that clients with schizophrenia do not relapse (relapse), family resilience is very important.

The capacity to adapt, overcome adversity, survive, and recover from crises in beneficial conditions is what is meant by resilience (Walsh 1998 in Plump, 2011). Resilience at the family level is affected by complex interpersonal dynamics and external circumstances. Risk and resilience are seen from the repeated impacts that affect people, families, and the wider social system in the biopsychosocial systems approach [9]. Family resilience consists of the capacity to cultivate adaptive interpersonal skills, such as the ability to differentiate between people with their conditions, and the presence of good family traits, such as acceptance and empathy [6][10].

According to the assumptions of researchers Parents, guardians, partners, relatives, or relatives who care for family members with schizophrenia face challenges, difficulties, or consequences that place a physical and emotional burden on the caregiver. Caregivers support individuals with schizophrenia with a variety of self-care tasks. However, caregivers themselves require significant emotional adjustment as they must work to overcome the uncomfortable emotions that occur to them. As a result, they need physical and mental support from the health professionals around them. It is hoped that nurses will be able to support, assist, and help families of schizophrenic patients [12].

Based on the results of the Chi square statistical test, it obtained a p-value of 0.002 (p <0.05) so that it was concluded that Ho was rejected and Ha was accepted which shows that there is a relationship between self-efficacy and the resilience of caregivers who care for people with schizophrenia. According to the results of the study, there is a significant relationship between caregiver resilience and their level of self-efficacy in caring for people with schizophrenia. This shows that there is a one-way relationship between resilience and self-efficacy. Caregiver resilience increases with the level of self-efficacy and vice versa. This result is in line with previous research by

Anandany et al (2016) which said that caregiver resilience and caregiver self-efficacy have a significant relationship [5][11].

This is in line with Bandura's notion of the triadic connection model, which involves three parts: environment, resilience-based behavior, and internal processes (Self Efficacy). The ability to maximize one's potential, control one's life, be able to handle negative emotions, and adapt to change are three factors that interact with each other, are highly connected to each other, and go in the same direction as Davidson (2002). excellent definition of resilience. According to Reivich (2002), people can adapt to change and have an influence on their lives. People with high self-efficacy are committed to finding solutions and will not give up even when they see their chosen approach fails. To support the above view. According to Bandura (1994), people with high self-efficacy will be successful in facing obstacles, have full confidence in their talents, quickly deal with problems, and be able to bounce back from adversity [7][10].

According to the researchers' assumptions, caregivers with high self-efficacy are more able to think critically, adjust their point of view to become more optimistic, and exert greater self-control. Caregivers with good self-efficacy can handle unexpected situations effectively and under control. Caregivers with high resilience tend not to give up easily, prefer to take initiative, and are aware of when and when to ask for help [4][5].

Caregivers with low self-efficacy cannot solve or reduce problems. Caregivers with poor self-efficacy often worry and struggle to find solutions when faced with problems. caregivers' low self-efficacy is seen in their behavior (resilience), which includes taking every problem seriously, constantly blaming others for their own misfortune, and giving up quickly.

V. CONCLUSION

Based on the results of research on the relationship between self-efficacy and the resilience of caregivers who care for people with schizophrenia, the results show that Self-efficacy is related to the resilience of caregivers who care for schizophrenic patients (p value=0.002).

CONFLICT OF INTEREST

No conflicts of interest have been declared

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Relationship Between Physical Activity And Hypertension In Men Aged 18-25 In Gendongan Village, Salatiga

Angkit Kinasih[1], Venti Agustina[1], Damar Amundhia[1]

Abstract--- Hypertension is an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg. Adequate physical activity can lower blood pressure for individuals with pre-hypertension and hypertension. For someone who does physical activity with moderate to high intensity with regular frequency there is a significant difference in reducing the risk of cardiovascular disease and having lower or normal blood pressure. The purpose of this study was to determine the relationship between physical activity and hypertension in men aged 18-25 in Gendongan Village, Salatiga City. Research data analysis includes unvariate data analysis which described the respondent's information in tabular form and bivariate data analysis using the Chi Square test to determine the relationship between physical activity and hypertension. The results of this study indicate a relationship between physical activity and hypertension, where respondents who engage in moderate to high-intensity physical activity are having lower blood pressure and respondents who engage in low-intensity physical activity are having higher blood pressure.

Keywords--- Men aged 18-25; Physical activity; Hypertension

I.   INTRODUCTION

Hypertension is still a significant health challenge for the Indonesian public today because hypertension sufferers are still found in almost all health service providers. High blood pressure is also a health problem that occurs throughout the world. Based on data from the World Health Organization (WHO) in 2013, there was an increase in the number of people with hypertension from 600 million in 1980 to 1 billion in 2008. The number of people with high blood pressure will continue to increase in 2020 to around 1.56 billion [1]. Hypertension or high blood pressure is an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg [2]. Hypertension is a disorder of the cardiovascular system or a non-communicable disease that cannot be cured but can be controlled [3], Increased blood pressure that lasts for a long time can cause damage to the kidneys (kidney failure), heart (coronary heart), and brain (stroke) if it is not detected early and does not receive adequate treatment [1].

High blood pressure is a silent killer, with symptoms that vary from individual to individual and are almost the same as symptoms of other diseases. Some symptoms of high blood pressure include headaches or a feeling of heaviness in the neck, vertigo, palpitations, fatigue, blurred vision, ringing in the ears, and nosebleeds. Primary hypertension is a disease caused by lifestyle factors, such as a lack of physical activity and diet [4]. Lack of physical activity can increase the risk of suffering from high blood pressure. People with low physical activity levels tend to have a higher heart rate, so the heart

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muscle has to work harder with each contraction. The bigger and more often the heart muscle pumps blood, the greater the pressure imposed on the arteries so that blood pressure will increase [5]. Adequate physical activity can lower blood pressure for individuals with pre-hypertension and hypertension. For someone who does physical activity with moderate to high intensity with regular frequency, there is a significant difference in reducing the risk of cardiovascular disease and having lower or normal blood pressure [6].

Hypertension is often found in the elderly, but as time goes on, hypertension is also found in adolescents and young adults [7]. Changes in globalization and technological advances have caused changes in the younger generation's lifestyle; high consumption of foods containing fat, sodium, and sugar and low consumption of foods containing fiber can increase the risk of hypertension [8]. The risk of hypertension in men of reproductive age is higher than that of women because women have the hormone estrogen, which plays a role in increasing levels of High-Density Lipoprotein (HDL) [9]. The risk of hypertension in men aged 18-25 years can also increase due to the consumption of cigarettes which contain chemicals that can damage the inner lining of the artery walls and stimulate the sympathetic nerves, thereby spurring the heart to work harder and causing narrowing of the arteries [10]. Hereditary factors or a history of hypertension in the family can also cause a person to be more at risk of developing hypertension [11]. Obesity or being overweight will also increase a person's risk of hypertension because excess fat in the body can cause narrowing of blood vessels, making the heart work harder [12]. Hypertension in productive age can also be caused by insufficient sleep duration and increased stress can also affect the incidence of hypertension [13]

The main results of RISKESDAS (2018) show that hypertension sufferers in Indonesia, based on measurements in the population aged > 18 years in 2018, was 34.1%, an increase from 2013 which was 25.8%. The Health Profile of the City of Salatiga 2015 [14] shows that hypertension has the most significant percentage of non-communicable diseases in the City of Salatiga, namely 74%, and in the working area of PUSKESMAS Sidorejo Kidul, Tingkir District, there are 671 cases of hypertension aged > 18 years, which is the most common occurrence of hypertension in the city. Salatiga. The results of a preliminary study in Gendongan Village, Salatiga City, found 10 men aged 18-25 years with hypertension. Systolic blood pressure was recorded between 140 and 175 mmHg and diastolic blood pressure between 92 and 115 mmHg.

Based on the explanation above and the findings on 10 men aged 18-25 years with hypertension, as well as the level of physical activity of men who must be higher than women. So the purpose of this study was to determine the relationship between physical activity and hypertension in men aged 18-25 years in the Gendongan Village area, Salatiga City.

II. METHODS

This research is a correlational study with a cross-sectional design in which researchers research the relationship between physical activity and hypertension. The research location is located in the Gendongan Village area, Salatiga City. The population in this study was men aged 18-25 years, with a random sampling technique. The sample criteria were men with pre-hypertension, grade 1 or level 2 hypertension, domiciled in the Gendongan Village area of Salatiga City, able to communicate, and willing to provide information to researchers. Data collection techniques to measure physical activity levels used the Global Physical Activity Questionnaire (GPAQ) physical activity questionnaire which the World Health Organization has validated, and to measure blood pressure using a TAFFWARE digital tensimeter with an accuracy of systolic and diastolic blood pressure measurements reaching + 3 mmHg. The way to measure the respondent's blood pressure is to make the respondent sit up straight and comfortable, take a five-minute break before measuring the blood pressure,

wrap the digital tensimeter cuff around the upper left arm, press the start button on the digital tensimeter and wait for the results to appear on the screen. The data analysis technique uses a physical activity frequency distribution table and a blood pressure frequency distribution table and tests the hypothesis using the Chi-Square test.

Table 1. Physical Activity Frequency Distribution

Variable	Instrument	Intensity	Scale
Physical Activity	Global Physical Activity Questionnaire physical activity questionnaire	Low	≤ 600 MET/week
		Medium	600-1500 MET/week
		High	1500->3000 MET/week

Table 2. Blood Pressure Frequency Distribution

Variable	Instrument	Skala	Sistole	Diastole
Blood Pressure	Measurement with TAFFWARE digital sphygmomanometer	Pre-hypertension	120-139	80-89
		Grade 1 Hypertension	140-159	90-99
		Grade 2 Hypertension	160 or >160	100 or >100

The Chi-Square statistical test was used to determine the relationship between physical activity and hypertension in men aged 18-25 in Gendongan Village, Salatiga City. The Chi-Square or Chi-Square test determines the relationship between variables in rows and columns. There are three categories of physical activity variables, namely low (1), moderate (2), and high (3), while hypertension variables have three types, namely prehypertension (1), grade 1 hypertension (2), and grade 2 hypertension (3). The hypothesis in this study is as follows:

H_0: There is no relationship between physical activity and hypertension in men aged 18-25 years in Gendongan Village, Salatiga City

Ha: There is a relationship between physical activity and hypertension in men aged 18-25 years in Gendongan Village, Salatiga City

Test Criteria

If the Asymp.Sig $< \alpha$ (0,05), then H_0 is rejected and Ha is accepted

If the Asymp.Sig. $> \alpha$ (0,05), then H_0 is accepted and Ha is rejected

III. RESULT

This study aims to determine the relationship between physical activity and hypertension. The research subjects who were used as respondents were residents who were male and had characteristics of around 18-25 years of age who lived in Gendongan Village, Salatiga City. The number of respondents in this study was 33 people. Physical activity data were collected using the Global Physical Activity Questionnaire (GPAQ) physical activity questionnaire and measuring blood pressure using a TAFFWARE digital tensimeter.

Table 3 Age Frequency Distribution of Respondents in Gendongan Village

Age (year)	Frequency	Persentage (%)
18	5	15.15%
19	9	27.27%
20	3	9.09%
21	2	6.06%
22	2	6.06%
23	7	21.21%
24	3	9.09%
25	2	6.06%
amount	33	100%

Based on the results of the calculations in Table 3, it shows that 18-year-old respondents were five people (15.15%), 19 years were nine people (27.27%), 20 years were three people (9.09%), 21 years were two people (6.06%), 22 years totaling two people (6.06%), 23 years totaling seven people (21.21%), 24 years totaling three people (9.09%) and 25 years totaling two people (6.06%).

Table 4 High Frequency Distribution of Respondent Bodies in Gendongan Village

Height (cm)	Frequency	Persentage (%)
160 -162	2	6,06%
163 - 165	5	15,15%
166 - 168	6	18,18%
169 -171	13	39,39%
172 - 174	4	12,12%
175- 180	3	9,09%
ammount	33	100%

Based on the calculation results in Table 4, it shows that two respondents have a height of 160-162 cm (6.06%), a height of 163-165 cm a total of 5 people (15.15%), height 166-168 cm totaling six people (18.18%), height 169-171 cm counting 13 people (39.39%), height 172-174 totaling four people (12.12%) and height 175-180 cm totaling three people (9.09%).

Table 5. Frequency Distribution of Respondents' Weight in Gendongan Village

Weight (kg)	Frequency	Persentage (%)
55 -62	13	39,39%
63-70	6	18,18%
71-78	5	15,15%
79 - 86	4	12,12%
87-94	3	9,09%
95-102	2	6,06%
Amount	33	100%

Based on the calculation results in Table 5, it shows that 13 people (39.39%) have a body weight of 55-62 kg, six people (18.18%) weigh 63-70 kg, 71-78 kg body weight totaling five people (15.15%), body weight 79-86 kg totaling four people (12.12%), body weight 87-94 totaling three people (9.09%) and body weight 95-102 kg totaling two people (6.06%).

Table 6 Frequency Distribution of Respondents' Body Mass Index (BMI) in Gendongan Village

BMI (Kg/m²)	Frequency	Persentage (%)
18,8-20,5	6	18.18%
21,4-22,5	7	21.21%
22,9-24,6	6	18.18%
24,9-26,8	5	15.15%

27,3-29,7	5	15.15%
29,8-33,6	4	12.12%
Amount	**33**	100%

Source: Processed research primary data (2020)

Frequency Distribution of Respondents' Body Mass Index (BMI) in Gendongan VillageBased on the calculation results in Table 6, it shows that respondents who had a Body Mass Index of 18.8-20.5 kg/m² totaled six people (18.18%), 21.4-22.5 kg/m² totaled seven people (21 .21%), 22.9-24.6 kg/m² totaling six people (18.18%), 24.9-26.8 kg/m² totaling five people (15.15%), 27.3-29 .7 kg/m² for five people (15.15%) and 29.8-33.6 kg/m² for four people (12.12%).

Table 7. Frequency Distribution of Respondents' Blood Pressure in Gendongan Village

Scale	Frequency	Persentage (%)
Pre-hypertension (120/80-139/89)	24	72,73%
Grade 1 Hypertension (140/90-159/99)	8	24,24%
Grade 2 Hypertension (160/100->160/100)	1	3,03%
Amount	**33**	100%

Source: Processed research primary data (2020)

Based on the calculation results in Table 7, it shows that respondents who have blood pressure on the pre-hypertension scale (120/80-139/89) are 24 people (72.73%), respondents who have blood pressure on the level 1 hypertension scale (140 /90-159/99) totaled eight people (24.24%). In contrast, respondents who had blood pressure on the level 2 hypertension scale(160/100->160/100) totaled one person (3.03%).

Table 8. Frequency Distribution of Respondents' Physical Activity in Gendongan Village

Physical Activity	Frequency	Persentage (%)
Low (< 600 MET/week)	5	15,15%
Medium (600-1500 MET/week)	8	24,24%
Hight (1500->3000 MET/week)	20	60,61%
Ammount	**33**	100%

Source: Processed research primary data (2020)

Based on the calculation results in Table 8, it shows that respondents who have low physical activity (<600 MET/week) are five people (15.15%), respondents who have moderate physical activity (600-1500 MET/week) are eight people (24.24%), while respondents who had high physical activity (1500-> 3000 MET/week) totaled 20 people (60.61%).

Table 9. Relationship Between Physical Activity and Hypertension

Physical Activity	Hypertension Degree			*Pearson Chisquare*	*Asymp.Sig*
	Pre-Hypertension	Grade 1 Hypertension	Grade 2 Hypertension		
Low	0	4	20		
Medium	4	4	0	25,300	0,000
Hight	1	0	0		
ammount	**5**	**8**	**20**		

Source: Processed research primary data (2020)

Based on the calculation results in Table 9, the results obtained for respondents who have low physical activity with degrees of blood pressure on the level 1 hypertension scale are four people, respondents who have low physical activity with degrees of blood pressure on the level 2 hypertension scale are 20 people, respondents who have moderate physical activity

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with degrees of blood pressure on the pre-hypertension scale totaling four people, respondents who have moderate physical activity with degrees of blood pressure on the level 1 hypertension scale totaling four people, and respondents who have high biological activity with degrees of blood pressure on the pre-hypertension scale - hypertension amounted to 1 person.

The results of the analysis using Chi-Square obtained an Asymp. Sig value of 0.000 because of the Asymp.Sig value <α (0.05), then H0 was rejected, and Ha was accepted. The result is a relationship between physical activity and hypertension in men aged 18-25 in Gendongan Village, Salatiga City.

IV. DISCUSSION

The research that has been conducted aims to determine the relationship between physical activity and hypertension in men aged 18-25 years in Gendongan Village, Salatiga City. The characteristics of the 33 respondents indicated that the most age characteristics of the research respondents were 19 years totaling nine people (27.27%), and the least being 21, 22, and 25 years, two people each (6.06%). The highest height was 169-171 cm, totaling 13 people (39.39%), and the least in the 160-162 cm field was two people (6.06%). The most weight was in the range of 55-62 kg totaling 13 people (39.39%), and the least in the field of 95-102, totaling two people (6.06%). The highest body mass index is 21.4-22.5 kg/m² totaling seven people (21.21%), and the least is in the range of 29.8-33.6 kg/m² totaling four people (12.12 %). The highest blood pressure was in the pre-hypertension category, namely 24 people (72.73%), and the least in the level 2 hypertension category, one person (3.03%). The most physical activity in the high class was 20 people (60.61%), and the least in the low category was five people (15.15%).

Respondents' blood pressure was measured using a TAFFWARE digital tensimeter, showing that most were pre-hypertension sufferers, amounting to 24 people (72.73%) of the total 33 respondents whose blood pressure was measured. The research results in Gendongan Village, Salatiga City, showed that most respondents had more controlled blood pressure with physical activity levels in the moderate to high category. Sufficient physical activity can, of course, make blood pressure normal or lower. Still, high or low blood pressure in men aged 18-25 cannot be separated from other factors besides physical activity. According to the results of a study [15] with the title hypertension and hypertensive retinopathy, several factors trigger hypertension in young adults; one of the triggering factors is diet. Uncontrolled eating patterns, such as consuming too much salt, can trigger high blood pressure. The greater the amount of sodium that enters the body, the higher blood pressure will occur.

At a young age, genetic factors, cigarette consumption, and stress levels can also increase blood pressure. Based on research conducted by [16] the results showed that respondents with genetic factors or a history of hypertension from their parents were 4.12 times more at risk of developing high blood pressure at a young age. Respondents with smoking habits were 3.087 times more at risk of experiencing high blood pressure, and respondents with uncontrolled stress levels were 6.417 times more at risk of developing high blood pressure.

The results of the research on the physical activity of the respondents, as measured based on the physical activity questionnaire of Global Physical Activity Questionnaire, showed that the respondents did the most physical activity in the high category, namely 20 people (60.61%) of the total 33 respondents who took part in this study. This proves that most men aged 18-25 years in Gendongan Village, Salatiga City, are active and productive individuals in physical activities. In line with research conducted by [17] with the title Relationship between physical activity and the Degree of Hypertension in Outpatients in the Working area of the Tagulandang Health Center, Sitaro Regency, which stated that most respondents had a moderate level of physical activity, namely 28 respondents (70%) and strenuous physical activity as many as 12 respondents or (30%) have more controlled blood pressure. Physical activity is any movement of the body's skeletal muscles that requires energy expenditure; if physical activity is carried out regularly, it will train the powers of the heart and peripheral resistance, which can prevent an increase in blood pressure. According to [18] heart and lung endurance fitness by doing moderate-intensity physical activity for 40 minutes three times a week can prevent hypertension.

The results of the Chi-Square test showed an Asymp. Sig value of 0.000 because of the Asymp.Sig value < α (0.05) means a relationship exists between physical activity and hypertension in men aged 18-25 years in Gendongan Village, Salatiga City. People with moderate to high physical activity who do regularly can improve blood circulation and reduce the risk of high blood pressure. Meanwhile, people who are less active or exercise tend to be overweight, which will increase the body's fat, so fat clogs blood vessels and increases blood pressure [19].

V. CONCLUSION

Based on the results of this study, it can be concluded that respondents who carry out a moderate to high intensity and do it regularly have lower or more controlled blood pressure compared to respondents who do physical activity with low power.

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Potential Analog Rice Based on Gadung Tuber (*Dioscorea Hispida*) for The Diet of Patients With Diabetes Mellitus

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Abstract--- *Diabetes Mellitus is a disease characterized by a state of hyperglycemia or a high glycemic index in the human body and disturbances in the metabolism of carbohydrates, fats and proteins associated with a relative deficiency of insulin action or secretion. One of the causes of diabetes mellitus is eating habits which are influenced by the type of food consumed, therefore diabetics are advised to consume foods with a low glycemic index. Indonesia is rich in local tubers as a daily source of carbohydrates. One type of tuber that is popular, namely gadung (Dioscorea hispida), it is easy to find in the community and the processing of gadung into food products has not much variety. The aim of this study was to formulate an analog rice based on gadung added seaweed as a potential functional food for Patients with Diabetes Mellitus. Based on the results obtained, it was found that analog rice from gadung tubers with the addition of seaweed extract had an amylose content of 19.85%, fiber content of 8.75%, fat content of 27.08%, protein content of 44.50%. In addition to the organoleptic test used the hedonic test method on analog rice with IR 64 rice did not show significant differences in the parameters of taste, texture, aroma and color with IR 64 rice. So analog rice from gadung tuber added to seaweed extract can be into functional food, a form of food diversification from yam tuber and has the potential as a food product that can be consumed for people with diabetes mellitus because of its low glycemic index and high fibers.*

Keywords-- *Analog rice, diabetes mellitus, food, Gadung, Glycemic Index*

I. INTRODUCTION

Diabetes mellitus is a disease characterized by a state of hyperglycemia or a high glycemic index in the human body as well as disturbances in carbohydrate, fat and protein metabolism associated with a relative deficiency of insulin action or secretion [1]. The impact of the high glycemic index that will be felt by people with diabetes mellitus from time to time is damage to various body systems, especially the nerves and blood vessels [2]. Based on Basic Health Research (Riskesdas) data from the Ministry of Health of the Republic of Indonesia in 2016 the number of people with diabetes mellitus in Indonesia reached 9.1 million people and is predicted to continue to grow.

There are several factors that cause people to develop diabetes mellitus, including age, physical activity, exposure to smoke, Body Mass Index (BMI), blood pressure, stress, lifestyle, genetic history, cholesterol, decreased High Density Lipoprotein (HDL) and a history of abnormal glucose [3]. One of the other factors that causes diabetes mellitus in the community is age and eating habits, where often the pre-elderly group in the community has eating habits that are more at risk of suffering from diabetes mellitus than other community groups so that a treatment is needed by regulating diabetes mellitus. diet by applying the method; Type of food, amount of energy and meal

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schedule. In carrying out this method, the type of food is the most important effort in controlling, avoiding and overcoming diabetes mellitus [4]. Types of food that can be consumed by people with diabetes mellitus are foods with a low glycemic index which are characterized by high levels of total dietary fiber, amylose levels, fat content and protein levels [5].

Indonesia is rich in local tubers that have existed since ancient times as a source of daily carbohydrates. One type of tuber that is quite popular among people is gadung (*Dioscorea hispida*),. Gadung is popularly consumed in the community because it is easy to grow and its maintenance is uncomplicated, so it deserves to be introduced to the public as a source of carbohydrates other than rice. In addition, currently the processing of gadung tubers is still not diverse, so food diversification is carried out so that gadung can be enjoyed in the form of processed food that is diverse and more easily accepted in society. In several studies, it has been proven that gadung has a low glycemic index which can make it slow digesting and absorbed in the blood [6].

Gadung contains secondary metabolites such as diosgenin, steroids, saponins, alkaloids, cyanide, phenol and terpenoids [7]. There are several compounds that cannot be consumed directly by the body in certain amounts contained in gadung such as cyanide acid, so further processing is needed so that the utilization of gadung for consumption activities can occur optimally and safely for everyone who consumes it. One type of advanced processing that can be done is by innovating gadung into rice analogues to increase shelf life and make gadung easier to serve for daily consumption.

Analog rice is a form of food diversification made from flour which can be an alternative food to replace rice [8]. In making analog rice, there needs to be substitution between rice which is generally made from paddy to rice made from flour. This rice analogue has special characteristics both physically and chemically. The physical characteristics of analog rice include the shape and color of the rice. In the form of analog rice is influenced by the process of processing flour into analog rice, while the color of analog rice is influenced by the raw flour used. The chemical characteristics of analog rice include the nutritional content of the materials used to be processed as analog rice. Therefore, the selection of raw materials must be done carefully because it will determine the nutritional content, and sensory properties or acceptance in society [9].

To maximize the physical and chemical structure of analog rice can be done by adding food ingredients such as seaweed extract. The addition of seaweed extract in maximizing the physical structure acts as a stabilizer and binder between the components of the ingredients in analog rice. In addition, in terms of texture, carrageenan is used to give a chewy texture to analog rice [10]. In addition, seaweed extract acts as a fiber enhancer in analog rice products [11]. The seaweed extract used is the KRI-02 brand. KRI-02 brand grass extract is used because it is easy to find and reach in the market.

The aim of this study was to make an analog rice formulation made from gadung which was added to seaweed extract as a functional food for people with diabetes mellitus. With this research, it is hoped that it can provide a new mindset for the public regarding eating habits that carbohydrate consumption is not only obtained from rice. However, carbohydrate consumption can also be obtained from analog rice. It is also expected to provide information on the nutritional content contained in analog rice.

II. METHOD

This research will be conducted in January — March 2023. The locations for the research are the Food Processing Laboratory for product manufacture, the Biochemistry Laboratory for proximate tests, the Sensory Laboratory for organoleptic tests, the Science and Mathematics Faculty Laboratory, Satya Wacana Christian University Salatiga (FSM SWCU) and the Satya Wacana Christian University Salatiga Faculty of Medicine and Health Sciences (SWCU

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FKIK). The type of research conducted is descriptive quantitative. The materials used in this study were gadung, water, husk ash, seaweed extract/citarrageenan powder (KRI-02), glycerol monostearate GMS), alcohol 96%, NaOH 1 N, distilled water, I2 2%, acetic acid 0.5 N, hexane, phosphate buffer 0.008 N pH 6, termamyl enzyme, protease enzyme, 0.325 N HCl, amyloglucosidase enzyme, 95% ethanol, HCl, bromcresolgreen indicator, methyl red indicator, 40% NaOH, boric acid, H2SO4, selenium, IR rice 64, 78% ethanol, 95% ethanol, potato amylose and acetone. Then the tools used in this study were basins, filters, knives, cutting boards, ovens, trays, blenders, digital scales (ACIS BC 5000), coconut graters, analog rice molds, distillation, desiccators, analytical scales (Ohaus), filter paper, aluminum cup, fat flask, kjedahl flask, fat-free cotton wool, spectrophotometer (UV-VIS genesys 10S), cuvette, erlenmeyer (Pyrex), volumetric flask (Iwaki), incubator and micropipette (Dlab). The research stages are as follows; pre-treatment, analog rice production, amylose content determination, total dietary fiber test, fat content test, protein test, organoleptic test and analysis.

Pre-Treatments

The gadung tuber used to make analog rice is the 6-12 month old gadung tuber (Christiningsih and Darini, 2015) originating from Polobogo, Kab. Semarang. The pre-treatment begins with washing and peeling the gadung tubers. Furthermore, gadung that has been peeled and washed will be cut into smaller sizes using a grater. The grated gadung tubers are then subjected to the surrender process by leaving it for 24 hours. HCN or cyanide acid that has been formedis then detoxified by soaking using husk ash and water with a concentration of 45% of the total gadung used to reduce the cyanide acid content present in gadung as much as 99.57%. The gadung tubers will be soaked for 36 hours and every 12 hours the soaking water will be replaced [12].

Analog Rice

Analog rice ingredients such as gadung tubers that have gone through pre-treatment, seaweed extract (KRI-02), glycerol monostearate (GMS) and water were prepared. Then the dry ingredients of 10g of seaweed extract and 15g of GMS are mixed and stirred until smooth. Then add 30 ml of water for 100 g of gadung tuber and stir until evenly distributed throughout. After that, the analog rice mixture that has been mixed is flattened on a tray with a thickness of approximately 0.5 cm. Followed by preconditioning at warm temperatures, namely temperatures of 80 – 90°C for approximately 5 minutes using an incubator [13]. Then it is dried in an oven for 3 hours at 60°C (Noviasari et al, 2017). After drying, the analog rice is printed using an analog rice printer to produce analog rice that resembles rice in general. Further tests were carried out on analogue rice such as determination of amylose content, total dietary fiber, fat and protein content, organoleptic tests and data analysis.

Determination of Amylose Levels

Determination of amylose levels was carried out using the spectrophotometric method [14]. Analog rice was mashed into flour, then weighed as much as 100 mg put into erlenmeyer and added 1 mL of 96% alcohol and 9mL NaOH 1 N. Heated at 100°C for 10 minutes, put the solution into a volumetric flask and diluted with distilled water up to the mark. . The diluted solution was taken using a pipette of 5 mL and put into a volumetric flask, added 2 mL of 2% I2 and 1 mL of 0.5 N acetic acid. The solution was diluted again with distilled water to a volume of 100 mL, then shaken and left for 20 minutes until the solution turned into a deep blue. The absorbance was measured at a wavelength of 645 nm for 20 minutes. For the preparation of amylose standard solution, 100 mg of potato amylose wasused which was added 1 mL of 90% alcohol and 1 N NaOH. Then the solution was heated for 10 minutes, then cooled for 1 hour and diluted with distilled water to a volume of 100 mL. Pipette solution each 0.25; 0.75; 1.0; 1.25; 1.5; and 2.0 mL. To this solution, 2 mL of I2 and 0.5 N acetic acid were added, each 0.5; 1.0; 1.5; 2.0; 2.5; 3.0; 3.5; 4.0mL. The solution was diluted again with distilled water to a volume of 100 mL. Then the absorbance is measured at a wavelength of 620 nm by calculation.

$$Abs\ 1ppm = \frac{I}{0{,}25} + \frac{II}{0{,}50} + \frac{III}{0{,}75} + \cdots + \frac{IV}{2{,}00}$$

Total Dietary Fiber Test

Total food fiber content can be determined by enzymatic methods [15]. The fat extracted from the rice analogue was done using the soxhlet extraction method using hexane for 6 hours. The extracted sample was weighed as much as 0.5 g and put into an Erlenmeyer, then 25 mL of 0.008 N phosphate buffer pH 6 was added and termamyl enzyme was added. The solution was incubated at 95°C for 30 minutes. After that, 5 mL of protease enzyme was added to the solution and incubated again at 60°C for 30 minutes. Then the solution was cooled and 5 ml of 0.325 N HCl was added, then 0.15 ml of amyloglucosidase enzyme was added to the solution and again incubated at 60°C for 30 minutes. The solution was added 140mL 95% ethanol at 60°C for 60 minutes. Then the solution was filtered using filter paper, the filter results were washed with 3× 20mL 78% ethanol, 2× 10mL 95% ethanol and 2× 10mL acetone. After washing, the filter paper was placed in an empty aluminum cup and dried in an oven at 105°C for 12 hours. The dried results were cooled in a desiccator, then weighed. Each parameter is repeated 3 times to get the right results.

$$\%Total\ Dietary\ Fiber\ Test = \frac{a-b}{w} \times 100\%$$

a = constant sample weight

b = weight of ash

c = initial sample weight

Fat Content Test

Determination of fat content in analog rice using the soxhlet method [15]. Prepare the fat pumpkin to be used, then dry it in the oven at 105°C for 30 minutes. The fat flask is cooled in a desiccator for 15 minutes and weighed using an analytical balance (W1). Analog rice as much as 5g was weighed in filter paper and tied with fat-free cotton wool. The fat solvent is put into the fat flask to taste. After that, put it into the soxhlet extraction tool and paired. The fat flask is heated and extracted for 3-4 hours. The solvent is distilled, after which it is removed and dried using an oven at 105°C until a constant weight (W2) is obtained. Cooled in a desiccator for 30 minutes and weighed (W3). Each parameter is repeated 3 times to get the right results.

$$\%Fat\ Content = \frac{W3-W2}{W1} \times 100\%$$

Protein Test

Determination of protein content using the kjedahl method [15]. Analog rice was weighed as much as 0.5 g and put into the Kjedahl flask. One grain of selenium was added to the flask and 3 mL of H2SO4 was added. The flask was put into the heater at a temperature of 410°C and added 10mL of water until the solution became clear. The clear solution was cooled and added 50 mL of distilled water with 20 mL of 40% NaOH. Then it was distillated using a 125mL Erlenmeyer containing 25 mL of boric acid, 2% bromcresol green indicator 0.1% and 0.1% methyl red in a ratio of 2: 1 with a bluish green distillate. Then titrate with HCl until the solution turns pink. The titration volume results are recorded. Each parameter is repeated 3 times to get the right results.

$$\%Nitrogen = \frac{(ml\ HCl\ sampel - ml\ HCl\ blanko) \times N\ Hcl\ \times 14}{mg\ sampel} \times 100\%$$

$$\%Protein\ content = \%\ Nitrogen\ \times conversion\ factor\ (6,25)$$

Organoleptic Test

Organoleptic test is used to measure preference for a sample. This level of preference is usually referred to as the

hedonic scale of the numbers 1-5 which means 1 "totally dislike", 2 "rather dislike", 3 "moderately like", 4 "like" and 5 "very like with the parameters of color, taste, texture, aroma and product as a whole. In analyzing the results of organoleptic data, scoring can be used (Kusmayadi, 2004). For this organoleptic test, the analog rice samples will be boiled first before being served to 30 untrained panelists. In this testing process, the panelists will compare the level of preference between analog rice made from gadung which is added to seaweed extract and IR 64 rice. IR 64 rice was chosen as a comparison to analog rice because IR 64 rice is affordable and has a high preference from both farmers and consumers in Java. Middle [16].

Analysis

The data obtained from the results of the determination of amylose content, total dietary fiber test, fat content and protein content in this analog rice will be analyzed. Then they compared amylose content, total food fiber content, fat content and protein content in IR 64 rice directly through the data obtained. As for the analysis of the organoleptic test using statistical analysis to show a significant difference in the results of the organoleptic test between analogue rice and IR 64 rice.

III. RESULT

For the analogous formulation of rice from gadung tuber, it was found that the formulation was made from gadung tuber flour, water, GMS, seaweed extract (KRI-02). The optimal formulation was obtained from a cursory observation that was made of the three formulations. Differences in the formulation are in the ratio of seaweed extract and GMS used in the manufacture of analog rice, in formulation 1 with a ratio of 3:1, formulation 2 with a ratio of 2:1 and formulation 3 with a ratio of 2:3 from the parameters of color, aroma, texture and taste . As for the mechanism of pre-treatment, processing of analog rice and chemical analysis of analog rice which includes organoleptic tests, determination of amylose content, fiber content, protein content and fiber content. In the pre-treatment stage the peeledgadung is washed and cut into smaller sizes using grated coconut to facilitate the HCN detoxification process in the gadung tuber. The grated gadung tuber is then subjected to a 24-hour incubation process. This incubation is carried out with the aim of obtaining conditions where the cyanogenic glucoside compounds and enzymes react maximally to produce HCN. The formed HCN is then detoxified by soaking using husk ash and water. At the beginning of the research, soaking was carried out using wood ash, but it turned out that this was not optimal for detoxifying HCN in gadung tubers. It is darker and smells more pungent. Soaking was carried out with a concentration of 45% of the total gadung used to reduce the cyanide acid content present in gadung to as much as 99.57% [12]. The gadung tubers will be soaked for 36 hours and every 12 hours the soaking water is replaced with the aim of maximizing the absorption of HCN in the gadung tubers by the husk ash.

At the formulation stage, each ingredient such as seaweed extract (KRI-02) 10g, GMS 15g and 100ml of water is prepared for formulation per 100g gadung tuber. The use of GMS, which is more than seaweed extract, in the formulation process aims to maximize the function of GMS in formulations which can bind carrageenan, gadung tuber and water more optimally. After preparing, all the ingredients are mixed into one dough and stirred until smooth. After that, the analog rice mixture that has been mixed is flattened on a tray with a thickness of approximately 0.5 cm and then preconditioning is carried out which aims to optimize the binding ability between one material and another. Proceed to the drying process which aims to reduce the water content in analog rice so as to extend the shelf life of analog rice. In addition, the water content of this analog rice affects the texture of the resulting analog rice. After beingdried, the new analog rice is printed using an analog rice printer to produce analog rice that resembles rice in general. Further tests were carried out on analog rice such as amylose content determination, total dietary fiber test, fat content test, protein test, organoleptic test and analysis. Product yields found on analog rice from gadung tuber added to seaweed extract with IR 64 rice products are presented in Table 1.

Table 1. Product yields of analog rice from gadung tubers added with seaweed extract with IR 64 rice products.

Sample	Picture
Analog rice	
IR 64 rice	

The results of amylose content, fiber content, fat content and protein content in analog rice from yam tubers added with seaweed extract are presented in Table 2.

Table 2. Results of analysis of amylose content, fiber content, fat content and protein content in analog rice from gadung tubers added with seaweed extract

Parameter	per 100 gram sample ± Stdev
Amylose	19.85% ± 0,64
Fiber	8.57% ± 0,45
Fat	27.08% ± 1,27
Protein	44.50% ± 0,93

Based on the results of subsequent studies, there were no significant differences in the organoleptic test results using the hedonic test on analog rice from yam tubers added with seaweed extract and IR 64 rice which is presented in Graph 1.

Graph 1. The results of the organoleptic test using the hedonic scale on analog rice from gadung tuber added seaweed extract with IR 64 rice
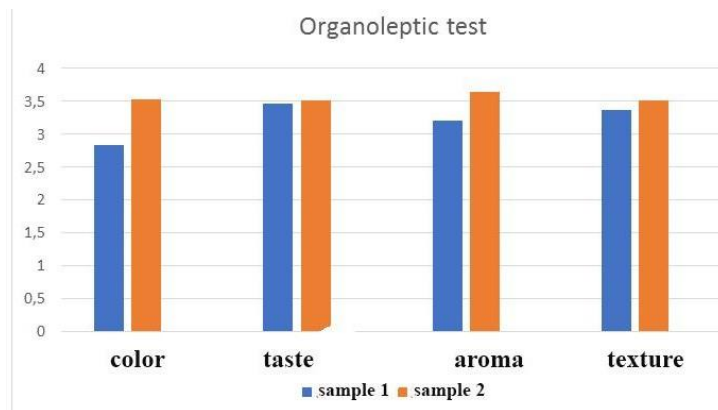
Table 3. Results of statistical analysis of organoleptic test data on analog rice products

Descriptive	Color	Aroma	Texture	Taste
Mean ± St.dev	2,83 ± 0,60	3,47 ± 0,63	3,20 ± 0,61	3,37 ± 0,67
Mode	3	4	3	3
Minimum	2	2	2	2
Maximum	4	4	4	5
Count	30	30	30	30

Table 4. Results of statistical analysis of organoleptic test data on IR 64 rice products

Descriptive	color	Aroma	Texture	taste
Mean ± St.dev	3,53 ± 0,68	3,50 ± 0,51	3,63 ± 0,49	3,50 ± 0,51
Mode	3	3	4	3
Minimum	3	3	3	3
Maximum	5	4	4	4
Count	30	30	30	30

IV. DISCUSSION

A product can be called a food product with a low glycemic index and is good for people with diabetes mellitus seen from several factors, namely fiber content, amylose content, fat content and protein content. Each of the ingredients used in making analog rice has a role and influence so that it can produce a certain glycemic index. The high amylose content causes slower digestion because amylose is a glucose polymer that has an unbranched structure. Amylose also has stronger hydrogen bonds compared to amylopectin, making it more difficult to be hydrolyzed by digestive enzymes. This unbranched structure makes amylose bound more tightly making it difficult to gelatinize and consequently difficult to digest. Amylose plays an important role in the gelatinization process and determines the characteristics of starch paste. High amylose content contributes significantly to changes in the strength of hydrogen bonds so that starch requires greater energy for gelatinization [5]. The International Rice Research Institute (IRRI) classifies rice into three categories based on its amylose content, namely low (<20%), medium (20 25%), and high (>25%). In addition, the amylose content of rice was divided into three groups, namely pera rice (25-30% amylose), medium (20-25%), and fluffier (<20%). The results of the research by Indrasari et al [16] showed that rice with low amylose content tended to have a high GI, rice with moderate

amylose had a moderate GI, and rice with high amylose had a low GI [5].

For fiber content with a low glycemic index product classification, namely Dietary fiber is the main componentof plant cell walls such as fruits, vegetables, cereals, and various tubers. In general, fruits that contain high levels of dietary fiber have low GI values. In general, a high dietary fiber content contributes to a low GI value. In its intact form, fiber can act as a physical barrier to digestion. Fiber can slow down the rate of food in the digestive tract and inhibit enzyme activity so that the digestive process, especially starch, becomes slower and the blood glucose response will be lower. Thus the GI tends to be lower. The results of the research by Indrasari et al. [16] showed that rice containing high dietary fiber reduced the glycemic response so that the glycemic index tended to be low.

Foods with high fat content tend to slow down the rate of gastric emptying, so that the rate of digestion of food in the small intestine is also slow. Meanwhile, high protein levels are thought to stimulate insulin secretion so that glucose in the blood is not excessive and under control. Therefore, foods with high fat and protein content tend to havea lower GI than similar foods that contain fat and protein. Food with a low GI can produce a lot of energy if it contains a lot of fat and protein. However, fatty foods must be consumed wisely. Total fat consumption should not exceed 30% of total energy and total saturated fat consumption should not exceed 10% of total energy [17]

From the results of distributing questionnaires to 30 panelists, it can be seen that analog rice and IR 64 rice products with color variables, the average total score of panelist answers is 2.833333333 and 3.533333333, with the highest total score of 4 with 5, the middle score is 3 and the highest score is the lowest is 2 with 3. The difference between the highest and lowest scores shows the range of the panelist's total score of 2. The mode value indicates that the total score of the respondents' answers is at most 3, which in analog rice and IR 64 rice is below the average total score. The results above also show that the total score of each panelist does not vary which can be seen from the standard deviation of 0.5920935 to 0.681445387.

For the aroma variable, the average total score of the panelists' answers was 3.466666667 and 3.5, with the highest total score of 4, the middle score of 4 to 3.5 and the lowest score of 2 to 3. The difference between the highest and lowest values indicates the range of the total score of the panelists equal to 2 with 1. The mode value indicates thatthe total score of respondents' answers is at most 4 with 3 which in analog rice is above the average total score and in IR 64 rice is below the average total score. The results above also show that the total score of each panelist does not vary which can be seen from the standard deviation of 0.628810225 to 0.508547628.

For the Texture variable, the average total score of the panelists' answers was 3.2 and 3.63333333, with the highest total score of 4, the middle score of 3 to 4 and the lowest score of 2 to 3. The difference between the highest and lowest scores shows the range of the panelist's total score of 2 with 1. The value of the mode indicates that thetotal score of respondents' answers is at most 3 by 4 which in analog rice is below the average total score with IR 64 rice above the average total score. The results above also show that the total score of each panelist does not vary whichcan be seen from the standard deviation of 0.610257153 to 0.490132518.

For the Taste variable, the average total score of the panelists' answers was 3.366666667 and 3.5, with the highest total score 5 with 4, the middle score 4 with 3.5 and the lowest score 2 with 3. The difference between the highest and lowest values indicates the total range the panelist's score is 3 with 1. The mode value indicates that the total score of the respondents' answers is at most 3 which is below the average total score. The results above also show that the total score of each panelist does not vary which can be seen from the standard deviation of 0.668675135 to 0.508547628.

Aside from being a diet for people with diabetes mellitus, this analog rice also has potential in the business sector. Where this analog rice can be mass produced and marketed with more optimal processing. This is evidenced bythe increase

in the selling value of gadung tubers before being processed and after being processed into analog rice. However, this analog rice still needs to be developed in terms of color, taste, aroma and texture parameters so that it can approach the results of analog rice which is more like rice consumed by everyday people.

V. Conclusion

Based on the results obtained, it was found that analog rice from gadung tubers with the addition of seaweed extract had an amylose content of 19.85%, fiber content of 8.75%, fat content of 27.08%, a protein content of 44.50%. In addition to the organoleptic test used, the hedonic test method or preference for analog rice with IR 64 rice did not show significant differences, so that it can be concluded that analog rice can still be well received by the public, by comparison of the parameters of taste, texture, aroma and color with IR 64 rice which is popularly consumed in Central Java. So that it can be a functional food and a form of food diversification from yam tubers. In addition, the rice analogue of gadung tuber also has potential as a food product that can be consumed by people with diabetes mellitus because of its low glycemic index.

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Dhikr Therapy on Anxiety in Patients with Breast Cancer at PKU Muhammadiyah Yogyakarta Hospital

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Abstract--- Breast cancer or the medical term mammary carcinoma is the second killer for women after uterine cancer. Anxiety is also defined as part of human life which is characterized by worries and fears that gradually become long and deep. Unresolved anxiety can cause sufferers to experience psychological responses such as rejection, anger, or fear that is very pressing so that the sufferer experiences excessive anxiety. One of the non- pharmacological interventions to reduce anxiety is dhikr therapy. Objective: The study aimed to determine the effect of dhikr therapy on anxiety levels in breast cancer patients at PKU Muhammadiyah Hospital Yogyakarta. The researchmethod used is quantitative using experimental quasi. This research approach used a one group pre and post-test design with the Wilcoxon Match Pairs Test. The subjects of this study were patients with breast cancer at PKU Muhammadiyah Hospital Yogyakarta with a total of 24 respondents. The questionnaire was distributed directly to patients. The results of the study showed the value of Sig. (2 tailed) was 0.000 which means that there is a diference between pre-test and post-test**.** Based on the analysis, it can be concluded that there was an effect of dhikr therapy on reducing anxiety levels in breast cancer patients at PKU Muhammadiyah Hospital Yogyakarta.

Keywords-- *Breast Cancer; Dhikr Therapy; Anxiety Level*

I. INTRODUCTION

Cancer is a disease caused by abnormal growth of body tissue cells. Breast cancer is a malignancy that starts from cells in the breast. Breast cancer or the medical term carcinoma mammae is the second killer for women after uterine cancer. Breast cancer occurs due to disruption of the cell growth system in the breast tissue. Breasts are composed of mammary glands, fatty tissue, and lymph nodes. Abnormal cells are able to grow in these four areas and cause slow but complete damage to the breast [1]. According to the World Health Organization (WHO) in 2018 the number of breast cancer sufferers has progressed to 2.09 million cases. This is also supported by data explained by Globocan that breast cancer is the most common type of cancer, with 24.2%, and is ranked fifth as the cause of death with a size of 6.6% or reaching 627,000 people [2].

Based on several studies that have been conducted, it is explained that breast cancer has a negative impact on affective relationships, life expectancy, long-term productivity and social plans. In addition, breast cancer has an impact on decreasing the quality of life both physically, psychologically, socially and environmentally. Physically, the impact can be in the form of pain, weakness of limbs and inability to meet health and treatment needs, while

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psychologically sufferers experience insomnia, low concentration power, feel afraid, anxious to depression. Socially and environmentally, the impacts that are usually shown are social communication disorders such as feeling less accepted by society, withdrawing from society and isolating oneself [3].

Breast cancer causes a change in body image due to the effects of treatment, causing the patient to experience psychological responses such as rejection, anger, or fear which are very pressing so that the patient experiences anxiety and results in self-concept which affects interpersonal relationships with other people. In addition, very long treatment can cause anxiety [4]. A diagnosis of breast cancer that attacks individuals will experience psychological disorders such as anxiety and depression. Several studies that individuals who suffer from breast cancer are more at risk of experiencing depression, mood disorders, increased negative emotional pressure and psychological pressure and anxiety [5]. According to research conducted by Kyei et al., explained that 84.2% of women with breast cancer experienced depression with a prevalence of 39.2% mild and 45% moderate severe, while the level of anxiety experienced was 92.5% with a prevalence of 34.2% mild and 58.3% moderate severe [6].

Anxiety is the anticipation of danger that will come in the future, and anxiety is also often associated with tense muscles, alertness, in preparation for the upcoming danger, and caution or avoidance behavior. Anxiety is also defined as a part of human life that is marked by long and deep worries and fears. Anxiety disorders are mental disorders that are often encountered and are associated with a high disease burden [7]. Unreasonable fear of worry and anxiety ultimately causes anxiety, this anxiety can have an impact on behavior changes, such as withdrawing angerand insomnia [8].

Psychological health such as anxiety for breast cancer sufferers is needed to help individuals reduce pain, overcome their disease status and strengthen mental conditions. In dealing with anxiety disorders in breast cancer sufferers, several relaxation behavioral therapies can be carried out which is one method that is carried out consciously able to help sufferers in controlling their psyche so that they can stabilize emotions and overcome symptoms of the disease, especially anxiety [9].

There are several alternative treatment methods, non-pharmacological and pharmacological treatment, pharmacological treatment can be done by giving drugs such as injections according to the dose, while non-pharmacological treatment consists of several treatments, namely music therapy, relaxation techniques, murotal therapy, dhikr therapy, and aromatherapy. One of the solutions given to patients to overcome anxiety in breast cancer patients with palliative care is dhikr therapy which is expected to reduce anxiety.

Dhikr is a form of spiritual and religious elements, dhikr as a way to get closer to Allah SWT can shape individuals to form other perceptions besides fear, namely the belief that every stressor will be dealt with properly with the help of Allah. Muslims believe that repeating dhikr can heal the soul and cure various diseases when a Muslim gets used to dhikr will feel confident, strong and happy [10].

II.   METHOD

This type of research is quantitative research using experimental Quazi. By using a one group pre and post test design approach. The sample consists of   24 respondents. The data collection tool was carried out using a Hamilton Anxiety Rating Scale (HARS) questionnaire. The data analysis used is parametric statistics, using the Wilcoxon Match Pairis Test. This research has gone through an ethical test at the Ethics Commission of PKU Muhammadiyah Yogyakarta Hospital with letter number 00189/KT.7.4/VIII/2022 issued on July 5, 2022

III. RESULT

Table 1. Respondent Characteristics

Karakteristik Responden		Frequency	Percent	Valid Percent
Age	37-39	6	25	25
	40-42	5	20,83	20,83
	43-45	13	54,16	54,16
	Total	24	100	100
Education	vocational education	2	8,33	8,33
	Bachelor	6	25	25
	Elementary School	2	8,33	8,33
	Senior High School	10	41,66	41,66
	Junior High School	4	16,66	16,66
	Total	24	100	100
Occupation	Housewife	8	33,33	33,33
	Farmer	5	20,83	20,83
	Private Sector Worker	11	45,83	45,83
	Total	24	100	100
income	Rp 1.200.000	9	37,5	37,5
	Rp 1.900.000	10	41,66	41,66
	Rp 2.000.000	5	20,83	20,83
	Total	24	100	100

Based on table 1 above, it shows that of the 24 respondents, most were aged 43 to 45 years, namely 13 people (54%), and the least aged 40-42 years, namely 5 people (21%). Based on table 1, it shows that of the 24 respondents, most of them had a high school education, namely 10 people (42%) and the least elementary and D3 students, namely 2 people (17%). Based on table 1 shows that of the 24 respondents, the highest was PRIVATE, namely 11 people (46%) and the least were FARMERS, namely 5 people (21%). Based on table 1 and the table above,it shows that out of 24 respondents, 9 IRT people earn Rp. 1,200,000 (37.5%), as many as 10 people who are self- employed earn Rp. 1,900,000 (42.6%), as many as 5 TANI earn Rp. 2,000,000 (20.8%). Based on table 1 above, it shows that of the 24 respondents, 12 people (50%) experienced mild anxiety the most and the least severe anxiety was 1 person (4%).

Table 2. Cross Tabulation of Pre Test and Post Test of Dhikr Therapy on Anxiety Levels

			Pos Test					Total
			No Worries	Mild Anxiety	Moderate Anxiety	Serious Anxiety	Very Serious Anxiety	
Pre Test	No Worries	Count	0	0	0	0	0	0
	Mild Anxiety	Count	12	0	0	0	0	12
	Moderate Anxiety	Count	9	2	0	0	0	11
	Serious Anxiety	Count	1	0	0	0	0	1
Total		Count	22	2	0	0	0	24
		% Of Total	91.7%	8.3%	.0%	.0%	.0%	100.0%

Based on table 2, it shows that of the 24 respondents who had the highest mild anxiety before the dhikr therapy was carried out, namely 12 respondents and 1 respondent who had the lowest mild anxiety. After the dhikr therapy was carried out, 2 respondents experienced mild anxiety.

Table 3. The effect of dhikr therapy on anxiety levels

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test Post- test	11,625	2,732	0.558	10,472	12,778	20,848	23	0,000

Based on a table 3 can be seen the results of statistical calculations using the Wilcoxon Match Pairs Test obtained a significance value of 0.000 <0.05, namely that there was an effect of dhikr therapy on the level of anxietyin breast cancer patients at PKU Muhammadiyah Hospital Yogyakarta.

IV. DISCUSSION

Cancer is a disease in women that is not contagious and is a public health problem, compared to men a woman is 100 times more likely to get cancer [11]. The spread of breast cancer cells can also spread through the bloodstream throughout the body and the spread of this cancer cannot be known when this cancer has spread. Cellsthat can hide for years in the body are breast cancer cells, and when they are suddenly active, they become malignantor cancerous tumors [12]. Anxiety experienced by breast cancer patients is a common reaction of newly diagnosed patients which makes the patient feel depressed during the initial visit when the prognosis and treatment options are discussed. Individuals who experience anxiety can have an impact on their physical health such as sleep disturbances, accelerated heart rate, disrupt the reproductive tract, fatigue, decreased immune system and disturbed self-quality.

According to Sutejo (2017) Signs and symptoms of patients experiencing anxiety are anxiety, worry about bad feelings, fear of their own thoughts and irritability, patients feel tense, restless, restless and easily startled, patients say they are afraid when alone or in a crowd and many people experience anxiety. disturbed sleep patterns and accompanied by tense dreams, impaired concentration and memory, presence of somatic complaints, such as pain in the muscles and spine, ringing or pounding in the hearing, shortness of breath experiencing indigestion, urination or headaches [13]

Anxiety in individuals experiencing increased anxiety is influenced by changes in life due to changes in a disease handlings process such as medical treatment, radiation chemotherapy, and hormone therapy in cancer patients 34 times a long time and is done repeatedly. In breast cancer sufferers, anxiety can affect individual perspectives related to treatment, a decrease in patient motivation results in discomfort, anxiety and in the long term can cause depression [14]

According to research by Tania et al., (2019) cancer sufferers who experience anxiety will have an impact on fatigue, poor handling, and affect the quality of the patient's immune system. In addition, anxiety can also have an impact on the severity of the disease, the type of treatment given, feelings of illness, eating patterns, menopausal status, physical structural functions, social and environmental functions, having a pessimistic attitude, changes in emotional regulation, affecting psychiatric history and insomnia [15]

This study is in line with Butar Butar et al., (2018) in breast cancer patients, it was found that 42.3% of respondents experienced severe anxiety. The results of this study explain that individuals who are faced with life-threatening diseases and health conditions will become more selective. Each individual has a different anxietyresponse [16]. According to Budiarti (2020) manifestations of anxiety consist of increased heart rate, feeling of trembling, frequent awakenings at night, and feeling afraid. Anxiety in cancer patients will increase with individual perceptions about the effects of very long treatment [17]. One technique to overcome anxiety by reading dhikr. The benefits of spiritual remembrance are to awaken the spirit of life in the heart, reduce anxiety. When doing dhikr, emotions can be controlled with the medium of dhikr because the diversion is done so that negative emotions do not continue, namely being free from worldly pressures, anxiety, hopelessness and depression, of course the benefits for the spiritual can eliminate psychological problems. The mechanism of Dhikr for anxiety [18].

The results of a survey by Time magazine and CNN as well as USA Weekend in 1996, stated that more than 70% of individuals believed that dhikr could help speed up the healing process of illness, while more than 64% of individuals stated that health workers should provide religious therapy such as dhikr. In general, when viewed from a mental health perspective, dhikr contains deep psychotherapeutic elements. Based on the research described, the researcher assumes that, when individuals habituate themselves in doing dhikr they will automatically feel that they are close to God so that they will grow self-confidence, feel safe and become a source of strength, then the anxiety they experience will slowly decrease [19].

V.   CONCLUSIONS

Based on the analysis, it can be concluded that the value of the level of anxiety before being given the act of dhikr experienced the highest mild anxiety, namely 12 respondents (50%) of the total 24 respondents. The highest value of the level of anxiety after being given dhikr therapy did not experience anxiety, namely 22 respondents (92%) of the 24 respondents. And there is the effect of dhikr therapy on the level of anxiety in breast cancer patients at PKU Muhammadiyah Yogyakarta Hospital

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The Effect Of Health Education On Diabetic Foot Ulcer Prevention Knowledge Among Diabetes Mellitus Patients In Yogyakarta

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Abstract--- Diabetes mellitus (DM) complication such as diabetic foot ulcers (DFU) is caused by changes in blood flow to the feet, poor glycemic control, neuropathy, improper foot care, foot deformities, wearing tight footwear, and dry skin. It is a serious complication of DM patients that results in significant morbidity and mortality. DM patients need to learn about foot care to prevent the complications. The study aims to determine the influence of health education on DFU prevention knowledge among DM patients at Yogyakarta. This study employed a pre- experimental research design with the One Group Pre-Test and Post-Test Design. The sample included DM patients at the Kalibawang Primary Health Center. The sampling in this study were 31 respondents with inclusion criteria: DM patient at the Kalibawang Primary Health Center, were able to communicate, and willing to be respondents. The independent variable in this study was health education using booklet media and the dependent variable was knowledge of diabetic foot ulcer prevention. The instrument used in the study was a knowledge questionnaire on theprevention of DFU which was given before and after the intervention. The Wilcoxon Test was used to analysis the data. The results showed a p-value of 0.000 ($p<0.05$). Thus, there was a significant difference in pre-test and post-testamong DM patients regarding the prevention knowledge of DFU at Yogyakarta. Health education can be used to enhance DM patient prevention knowledge about DFU. Health education needs to be applied to patient with DM to increase patient prevention knowledge regarding DFU.

Keywords-- *Complication; DFU; DM patient; Pre-test and post-test*

I.   INTRODUCTION

Diabetes mellitus (DM) is a metabolic endocrine condition characterized by insulin deficiency (Type 1) or impaired insulin activity (Type 2), resulting in hyperglycemia [4]. The DM population more than 371 million people worldwide aged between 20-79 years suffering from DM [4] . In 2013-2018, almost all provinces in Indonesia experienced the increasing of DM incidence with DI Yogyakarta have highest prevalence following by DKI Jakarta, North Sulawesi, and East Kalimantan [10]. It is estimated 747,712 people in D.I. Yogyakarta sufering DM in 2020 [17]. In 2021, the number of diabetics in Kulon Progo increased to 6,528 people, previously there were 5,678 DM sufferers in 2020 [6]. In 2021, Kalibawang Health Center had 682 diabetics and 34 patients with diabetic foot ulcers (DFU) [6].

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Diabetic foot ulcers (DFU) is one of the most common complication of DM poorly managed. Individuals with DFU face longer recovery times, poor glycemic control, and comorbidities (Tuglo et al., 2022). DM patients should have sufficient knowledge of proper foot care to avoid DFU and various complications [19]. The International Working Group on the Diabetic Foot (IWGDF) identifies five key elements of DFU prevention and one of them is educating the patients[4]. Education is the process of delivering health messages to groups or communities with the purpose of increasing the knowledge [1]. High knowledge helps to overcome confusion, increases self-confidence and motivation for better self-management in DM patients [8]. Education to increase knowledge and commitment to self-care is essential for people with DM. The type of media used has a significant influence on the process of providing health education [2]. Optimization in its implementation requires media support, health education media that can be used is booklet. Booklet provides more information with beautiful visuals, so as to motivate readers to expand their knowledge. In addition, booklets have benefits as a medium of counseling, which can enhance patient knowledge in a very short time [14].

II. METHOD

This research is a quantitative, pre-experimental design method with One Group Pre-Test Post-Test. It was conducted at Kalibawang Primary Health Center in 2023. The independent variable in this study was health education using booklet, while the dependent variable was knowledge of diabetic foot ulcer prevention. The population in this study was 687 DM patient. Sampling in this study used total sampling techniques. Total sampling is a sampling technique with all members of the population used as samples [18]. The respondents in this study were DM patient who actively participated in the activities of the Chronic Disease Management Program (PROLANIS) at Kalibawang Primary Health Care, willing to be respondent, and able to communicate. The sampling were 31 DM patient. While the exclusion criteria were DM sufferers with DFU and DM sufferers with physical limitations, mental/emotional disorders, cognitive, chronic complications that can interfere and hinder the research.

The instrument used in this study was a booklet, as a medium in delivering information about DFU prevention in DM patient and DFU prevention knowledge questionnaire. The data in this study were displayed in the form of tables for demographic data and DFU prevention knowledge data. This questionnaire has been tested for validity and reliability by Munali and Kusnanto, (2019) [11]

Univariate analysis in this study about respondents' characteristics such as age, gender, education, sources of information obtained and experience exposed to DFU displayed in tabular form. Bivariate analysis in this study used to determine the effect of health education media booklet on DFU prevention knowledge in patients with DM by looking at pre-test and post-test. Bivariate analysis is displayed in tabular form.

Data management first performs a data normality test to find out whether the data is normal or not. Test the normality of the data used using the Saphiro Wilk test. The result shows that the data was abnormally distributed so that the statistical test used in this study was the Wilcoxon Test. This study was approved by ehical clearance No: 2573/KEP-UNISA/II/2023 on February 13, 2023 and a research permit from Universitas 'Aisyiyah Yogyakarta No: 235/FIKES- UNISA/Ad/II/2023 on February 15, 2023.

III. RESULT

Based on table 1 shows that most respondents are women 26 people (83.9%). The age of respondents was mostly 60-74 years as many as 19 people (61.3%). The education of respondents was mostly elementary and junior high school as many as 9 people each (29%). Respondents mostly had no history of diabetic foot injuries, 24 people (77.4%).

Most respondents have received information on diabetic foot injury prevention, namely 22 people (71%) and the information media obtained mostly from puskesmas was 21 people (67.7%).

Table 1. Demographic Characteristics of Respondents

Characteristics of Respondents	Frekuensi (f)	Presentase (%)
Gender		
1. Man	5	16,1
2. Woman	26	83,9
Total	31	100
Age		
1. 45-59	9	29
2. 60-74	19	61,3
3. 75-90	3	9,7
Total	31	100
Recent Education		
1. Not in School	1	3,2
2. SD	9	29
3. SMP	9	29
4. SMA	7	22,6
5. PT	5	16,1
Total	31	100
History of diabetic foot injuries		
1. Ever	7	22,6
2. Never	24	77,4
Total	31	100
Diabetic foot wound prevention information		
1. Ever		
2. Never	22	71
Total	9	29
	31	100
Information Media		
1. None	9	29
2. Internet	1	3,2
3. PHC	21	67,7
Total	31	100

Table 2. Knowledge Distribution Pre-Post Responders given Health Education

Knowledge of Diabetic Foot Ulcers prevention	Pre test		Post test	
	Frekuensi (f)	Presentase (%)	Frekuensi (f)	Presentase (%)
Good	0	0	20	64,5
Enough	17	54,8	6	19,4
Less	14	42,2	5	16,1
Total	31	100	31	100

Based on Table 2 shows that the level of knowledge in DM sufferers is divided into 3 categories, namely good, sufficient and lacking. The results of the study of the level of knowledge of respondents before being given health education to DM sufferers were at most in the sufficient category there were 17 respondents (54.8%). And after being given health education to the most respondents in the good category there were 20 respondents (64.5%).

Table 3 shows that the results of the Shapiro-Wilk test obtained pre-test values of 0.000 (p<0.05) and post-test 0.000 (p<0.05) of the Shapiro-Wilk test are smaller than the sig = 0.05 value, so it is concluded that the data are not normally distributed. So the non-parametric test used is the Wilcoxon Test.

Table 3. Data Normality Test Results

Uji	Shapiro-Wilk
Pre Test	0,000
Post Test	0,000

Tabel 4 Wilcoxon Test Results Pre and Post Test Knowledge given Health Education

Group	Pre Test		Postest		p-value
Experimen	Mean	Std. Deviation	Mean	Std. Deviation	
	2,45	0,506	1,52	0,769	0,000

In table 4 shows the results of knowledge obtained, the significant value obtained is $0.000 < 0.05$ so Ho is rejected and Ha is accepted. So it can be concluded that before and after health education is given, there is an influence of health education booklet media on knowledge of preventing diabetic foot ulcers in DM patients at Kalibawang HealthCenter.

IV. DISCUSSION

DM patient Knowledge Before Being Given Health Education with Media Booklet

The description of respondents' knowledge in this study is categorized into three categories, namely good, sufficient and lacking. Knowledge before the intervention on 31 respondents showed 17 people (54.8%) had sufficient knowledge and 14 people (42.2%) had lacking knowledge. It might be due to some respondents had previously gained knowledge of diabetic foot ulcer prevention from puskesmas officers through the prolanis program. The prolanist program at Kalibawang Primary Health Center is held once a month. Where in this prolanist activity there is the provision of health education. Based on age characteristics, respondents aged 60-74 years as many as 19 people. However, only 12 people have enough knowledge. This is might be because the majority of respondents are aged between 60 to 74 years, and at that age respondents begin to experience changes that can affect the learning process during health education, such as physical and physiological changes. Degenerative physical changes can impair sensory functions, including hearing, vision, sensation, and response time. These changes can have an impact on the learning ability of the elderly during health education, but research shows that if the learning process is done appropriately and the information provided is in accordance with their needs and skills, the elderly can learn and remember efficiently [3]. This causes some respondents who still remember the DFU prevention material that has been delivered by prolanist officers and there are some respondents who forget or have not received health education related to DFU prevention.

Based on the last level of education, respondents in this study consisted of 5 levels, namely not school, elementary, junior high, high school and college. Of the 31 respondents, 9 respondents or most (29%) had elementary and junior high school education and 1 respondent or a small part (3.2%) did not go to school. Judging from the characteristics of respondents, more than half of them have junior high and elementary school education levels, so it can be said that education is still low. There are several factors that affect knowledge, namely age, experience, occupation, environment, socio-cultural, information and education [15]. Education aims to help students develop their personality and skills both inside and outside the classroom, however, it should be underlined that not all people with low education

have low knowledge [13]. Thus might be can be a reason the majority of the participant have sufficient knowledge related to DFU prevention.

Knowledge of DM Respondents After Being Given Health Education Media Booklet

This study showed that respondents' knowledge after being given health education was 20 respondents (64.5%) had good knowledge, 6 respondents (19.4%) had sufficient knowledge and 5 respondents (16.1%) had less knowledge. The value obtained after the provision of health education is greater than before the provision of health education. There is sufficient and insufficient knowledge because some respondents are taking medication in place of collection of the medication so might be they do not pay attention to health education until completion. But previously respondents had been given health education related to the prevention of diabetic foot ulcers so that respondents could fill out the questionnaires. This shows that there is an increase in knowledge between before and after the intervention.

Knowledge is influenced by a number of variables namely: experience, education, verbal instruction and reception of verbal information from other parties, occupation, age, information, media. Each factor does not stand alone, often a combination of several factors. Information can be obtained in various ways, including through print and electronic media that can affect a person's level of knowledge. Various types of print media are booklets, leaflets, flyers,flip charts, newspapers, posters and photos. While electronic media include television, radio, video, slides and film strips [15]. Booklets are one of the most common mediums used by health professionals to provide guidance on the services they provide.

According to expert research, the eyes are the senses that transfer the most information to the brain [16]. Between 75% and 87% of human information is acquired and communicated visually. Meanwhile, the remaining 13% to 25% is channeled through other senses. From this it can be concluded that the booklet media is a useful means to support health promotion and has proven effective in increasing awareness of DM sufferers at the Kalibawang PrimaryHealth Center towards DFU prevention.

The findings of this study are consistent with the findings Azhar in 2021, It was shows that respondents' awareness of diabetic ulcers is generally high (76.7%) after receiving health counseling [2]. The adoption of appropriate health education media has an effect on increasing the understanding of DM sufferers. A booklet is a type of media that includes written and visual content and is used to disseminate health-related information. The advantages of booklet media include a more attractive design so that readers stay interested and not bored while reading, complete and easy- to-understand content, and easy to carry to use anytime and anywhere [7].

The Effect of Health Education Media Booklet on DM Respondents' Knowledge in Preventing Diabetic Foot Ulcers.

The results of the Wilcoxon Test showed results with a significant value of 0.000 ($p < 0.05$). These results showed that Ha was accepted and Ho was rejected or there was an influence of health education booklet media on the knowledge of preventing diabetic foot ulcers in DM patient for one intervention group, the results of this study after being given health education showed an increase in respondents' knowledge after being given health education.

This research is in line with Bloom's theory of cognitive domain classification of parts of knowledge. Knowledge is the ability to recognize and remember basic terms, definitions, facts, ideas, patterns, sequences, methodologies, principles [12]. In this study, most respondents had good knowledge after being given health educationon the prevention of diabetic foot ulcers. This might be due to respondents were given questionnaires after being given material related to the prevention of diabetic foot ulcers, so respondents still remembered the material. This research was

supported by previous researchers, that health education interventions using booklet media have a significant effect on increasing knowledge about diabetic ulcer prevention in DM sufferers [2] [9].

The availability of instruments or media to help deliver the message or content to be delivered is evidence of the effectiveness of health education. Teaching aids are one of the health promotion techniques that can be used to deliver health education in an effort to increase knowledge. The health education media used by researchers is booklet media. Booklet, is a media in the form of a book used to convey health messages in the form of books, both in the form of writing and pictures. The advantages of booklet media include a more attractive design so that readers stay interested and not bored while reading, complete and easy-to-understand content, and easy to carry to use anytime and anywhere.Other research conducted by Azhar in (2021) that health education using booklet media is proven to be able to increaseknowledge of DM sufferers in the prevention of diabetic foot ulcers [2].

V.   CONCLUSIONS

In conclusion, health education using booklet play an important role in improving patient knowledge of DFU prevention. This health education needs to be applied to patient with DM to improving patient prevention knowledge regarding DFU.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report. We certify that the submission is original work and is not under review at any other publication.

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The Effect of Case Study and Team-Based Project Learning Method in Medical Surgical Nursing Learning Competence

Felicia Risca Ryandini[1], Ismonah[1]

Abstract---Lecturers in carrying out lecturer learning designs, lecturers must be able to determine appropriate, innovative methods, and can provide "triggers" for students to think critically and creatively. Case study methods and team-based project learning are considered very appropriate for exploring and developing skills through problem solving activities. The purpose of this study was to determine the effect of case studies and team-based project learning methods on student competency in medical surgical nursing learning. This research design used was quasi-experimental using total sampling. This study directly evaluates the results of student course scores by looking at cognitive, psychomotor and affective abilities.: The results showed that there were significant differences in student competency in the control and intervention groups with a p value of 0.01. Where changes in values in the control group obtained better post-test results by 28 respondents and there was no change in 3 respondents. Whereas in the intervention group the post test results were better by 50 respondents and there was no change in 1 respondent. Through this method the results obtained are increasing learning motivation, increasing critical thinking and problem-solving abilities, being more active, and making the learning atmosphere more enjoyable. The conclusion of this study is that there is a significant influence in the application of the case study and team-based project learning methods before and after the action is taken on students taking the Medical-Surgical Nursing course. This method can be applied specially to courses with learning outcomes including knowledge-skill-attitude skills.

Keywords-- case study, team-based project learning, competence, medical surgical nursing

I. INTRODUCTION

The curriculum is the most important part where its existence provides direction in determining the design, implementation and evaluation that must be carried out by tertiary institutions of health, especially nursing. Based on the 2021 Nursing Education Curriculum Guide, the curriculum developed focuses more on student-oriented learning processes (student centered learning) and uses blended/hybrid learning. This shows that Nursing Education needs to seek a variety of innovative learning methods so that students can explore what can be learned based on the competencies to be achieved.

Learning can be interpreted as a process of developing creative thinking that can improve students' thinking skills, and can improve and construct new knowledge so as to increase good mastery and development of course material [1]. By using the student centered learning method, students are subjects in learning and enable students to learn more

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actively, independently, and apply and understand the material being taught according to their individual abilities [2]. There are many alternative learning methods that can be used by lecturers in lectures.

Lecturers in this case are one of the determining factors for the success of students in achieving competency. Not only in the learning process, but in carrying out learning designs lecturers must be able to determine appropriate, innovative methods, and can provide "triggers" for students to be able to think critically and creatively. The results of aliterature review conducted by researchers obtained several learning methods that can increase innovation in the education system, including case studies, project-based learning, problem-based learning, and collaborative learning.

The case study learning method is a method that is considered very appropriate for exploring possible effects on learning as a form of holistic investigation of social phenomena that commonly occur in society [3]. The results of research conducted by Utami & Indrayanti (2018) show that by applying the case study method there is an increase in cognitive and affective learning outcomes with a recapitulation of student assessments of 82% in the very good results group. Project Based Learning is an approach to learning that provides opportunities for students to deepen knowledge while developing skills through problem solving and investigative activities [4,5]. Based on the description of the phenomenon, it is necessary to develop a learning method in nursing through a study, namely the influence of case studies and team-based project learning methods on student competency in medical-surgical nursing learning.

II. METHOD

Researchers used a quantitative research method with a quasi-experimental design with a cross-sectional approach.

Scheme 1. Research Design

Keterangan :

X   : Case study
Y   : Project-based learning
Z   : student learning achievement
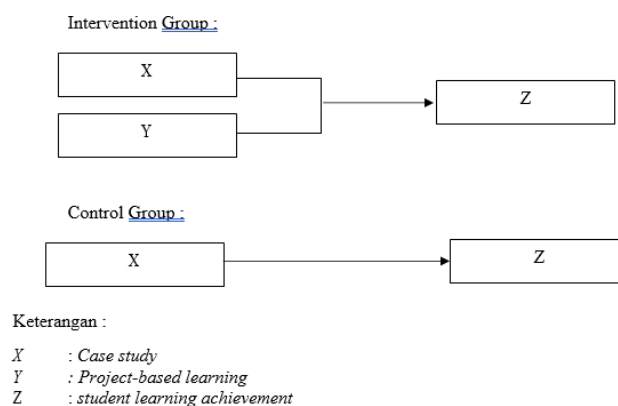
The population in this study were all students of the Bachelor Nursing Study Program in STIKES Telogorejo Semarang. The sample in this study were 6'th semester students who were running a Medical Surgical Nursing Course. The sampling technique in this study used a total sampling of 108 respondents.

The independent variables in this study are the case study method and the project-based learning method. The case study method in this study is defined as the learning method used in the Adult Nursing Course where students are given real cases obtained at the Hospital and then the cases are analyzed to achieve the expected competencies and contained in the Semester Learning Plan. The project-based learning method is a learning method used in Adult Nursing Courses where students carry out nursing care starting from assessment, diagnosis, planning, implementation and evaluation in a case played by a trained proband who has a certain scenario. The dependent variable in this study is student achievement. Student learning achievement is the result of student course scores at the end of the course.

The data will be analyzed through 2 stages, namely univariate and bivariate analysis. Through univariate analysis will be described related to the characteristics of the respondents, the average value (mean) pre-test and the average

value (mean) post-test. Meanwhile, in the bivariate analysis, a hypothesis test will be carried out using the independent T-test to compare the control group (case study) to the intervention group (case study with project-based learning), which previously tested the normality of the data. If the data is normally distributed, it is continued with the independent T- test, while if the data is not normally distributed, it uses Mann Whitney. This research has been tested ethically and hasreceived ethical clearance from the Telogorejo STIKES Research Ethics Committee with Ethical Clearance No. 035/S/IV/STIKES/2022.

III. RESULT

The research results that have been obtained are as follows:

Table 1. Characteristics of participants

Characteristics	n	%
Gender		
Male	14	13.3
Female	91	86.7
Previous semester cumulative grade point index		
< 2.75	1	0.95
2.75 – 3.00	13	12.4
3.00 – 3.50	64	60.9
3.50 – 4.00	27	25.7

Table 2. The effect of case study and team-based project learning method within Groups

Students learning achievement	Experimental Groups (n=53)		Control Groups (n=52)	
	Mean ± SD	P value	Mean ± SD	P value
Pre	68.61 ± 3.87	0.001	66.68 ± 5.76	0.001
Post	73.46 ± 4.89		70.57 ± 4.60	

Table 3. The Effect of Case Study and Team-Based Project Learning Method in Experimental and Control Group

Students learning achievement	Experimental Groups (n=53)	Control Groups (n=52)
Positive Rank	50	28
Negative Rank	2	3
Ties	1	21

Table 4. Difference in Students Learning Achievement Before and After Intervention Between Experimental and Control Group

Students learning achievement	Experimental Groups (n=53)	Control Groups (n=52)	Mean Difference	P value
	Mean ± SD	Mean ± SD		
Pre	68.61 ± 3.87	66.68 ± 5.76	43.25	0.001
Post	73.46 ± 4.89	70.57 ± 4.60	62.57	

Table 1 shows that most of the respondents were female, namely 86.7% and the grade-point average (GPA) for the previous semester was mostly in the 3.00-3.50 group, namely 60.9%.

Table 2 shows that there was a significant effect in both the control group and the intervention group where the p value < 0.05 (0.01). With the average post-test score in the experimental group being 73.46 ± 4.89 and in the control group 70.57 ± 4.60, it can be concluded that the average value obtained by the experimental group in the post-test was higher than in the control group.

Table 3 shows that in the experimental group as many as 50 respondents (postive rank) got a higher post-test score than the pre-test, there were 2 respondents with a lower post-test score (negative rank), and there was 1 respondent hadthe same pre-test and post-test scores. Meanwhile, in the control group, 28 respondents (postive rank) received higher

post-test scores than the pre-test, 3 respondents had lower post-test scores (negative rank), and 21 respondents had the same pre-test and post-test scores.

The results of statistical analysis for the difference test between the control group and the experimental group in this study found that there was a significant difference between the post-test values of the experimental and control groups expressed by a p value <0.05 (0.01) (Table 4). This study revealed that there is a significant influence in the application of the case study and team-based project learning methods before and after the action is taken on students taking the Medical-Surgical Nursing course.

IV. DISCUSSION

The concept of learning is a process in which a person's environment is deliberately managed properly to allow that person to participate in certain behaviors under special conditions or produce responses to certain situations, because learning has an important role in education [6]. According previous research tertiary institutions must adopt an innovation in the curricular, as well as identify potential obstacles from the perspective of faculty and students in order to further improve the quality of higher education learning [7].

Currently learning is faced with generations which have innovative and creative thinking. Lecturers are professional educators and scientists with the main task of transforming, developing and disseminating science, technology and art through education, research and community service through their students [8]. This is where skills and expertise are needed where lecturers continue to make innovations that can facilitate students, one of which is withlearning methods.

In the world of education there are various kinds of teaching methods, which in use must be adapted to various things, such as the situation and conditions of ongoing teaching and learning activities, the facilities available, and so on must be adapted to the educational goals to be achieved. The method as a way to implement plans that have been prepared in the form of real and practical activities to achieve learning objectives. The results showed that there was a significant effect in both the control group and the intervention group where the p value < 0.05 (0.01). With the average post-test score in the experimental group being 73.46 ± 4.89. The learning method does not only function as a way to convey material, but has the task of managing learning activities so that they can achieve learning objectives appropriately [9]. According to previous research in a learning method the learning method is an external stimulus that can arouse one's learning. In this case it can be concluded that the method as a means of extrinsic motivation means the method as a means of stimulation from outside which can arouse the learning of students from outside so that the lesson can be accepted by students easily and pleasantly [10]. The results of the research show that one of the methods that can increase students' interest in learning is case study and project-based learning.

Focuses on learning methods that use problems as a first step in gathering and integrating new knowledge based on experience in real activities. Students are the center of learning and the lecturer acts as a facilitator so this is very suitable for the implementation of Student-Centered Learning. With the target of learning achievement in the Medical Surgical Nursing course where students are able to carry out nursing care simulations with cases of endocrine, immunological, digestive and urinary system disorders in adult clients with due regard to legal and ethical aspects. Through this method students can identify problems that occur with clients, carry out investigations and problem solving through nursing care so that they can achieve attitude, knowledge and skill competencies. In line with previous research,project-based learning is an instructional technique in which meaningful tasks, often in the form of problems; serve as the context and the stimulus for knowledge-building and critical thinking and move toward creating a student community

of inquiry involving authentic communication, cooperative learning, collaboration, and problem solving. It challenges learners with real world problems to solve or questions to answer [11].

Some research results are in line with those carried out by researchers, among others, that the use of media, one of which is by providing cases in learning or also called media learning in the teaching and learning process can generate new desires and interests, generate motivation and stimulate learning activities, even bring psychological influences on students [12]. The application of the case study method was effective in showing that the average increase in cognitive and affective learning outcomes in the experimental class was greater than that of the control class and significantly different, students and teachers gave positive responses > 70% towards the application of the case study method to optimize learning outcomes. The results of research conducted by previous researcher showed that there were significantdifferences between the control class using the lecture discussion presentation method and the experimental class usingthe student created case studies learning method on students' practical abilities [13].

Project Based Learning (PjBL) is a teaching approach that is built on learning activities and real tasks that provide challenges for students related to everyday life to be solved in groups [14]. In line with the previous research that PjBL may be attributed to the possibility of upgrading and developing students' critical skills through project strategy teaching. Basically, the project-based learning strategy is an inquiry-based approach in which the student is the researcher who acquires experience while the teacher is the supervisor and instructor [15].

In the PjBL model, students not only understand the content, but also develop students' skills on how to play a rolein society. Skills developed in PjBL include communication and presentation skills, organizational and time managementskills, research and investigation skills, self-assessment and reflection skills, group participation and leadership, and critical thinking [16].

The PjBL learning method is a project-based learning model that is quite useful in designing effective learning so that it has enough potential to meet learning demands [17]. According to previous research PjBL is a learning model thatis used to encourage students to actively learn by collaborating to solve a problem so that they can reconstruct learning based on the project being carried out [18]. The advantages of the PjBL method, including: involving the creativity of students, so that students are able to think critically, encouraging students to develop their abilities and skills, students gain experience in learning to create a project, encourage students to be more active in the learning process, learning is more flexible, increasing the ability of students to work together in groups to solve a problem, and so on [19].

V. CONCLUSION

This study revealed that there is a significant influence in the application of the case study and team-based project learning methods before and after the action is taken on students taking the Medical-Surgical Nursing course.

CONFLICT OF INTEREST
No conflicts of interest have been declared

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Family Support in Hypertension ControlIn the Elderly: A Literature Review

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Abstract---Heart disease (cardiovascular) is a major health problem in the world. Hypertension is one of the dangerous health problems worldwide The prevalence of hypertension increases with age, regardless of gender, affecting 70% of the general population over the age of 80. This study aims to examine the impact of family support on hypertension control in the elderly. Research using literature study methods or literature review with PICO analysis. The search uses science direct database, proquest, scopus and google scholar with keywords elderly, family support and hypertension control. Article assessment using Duffy's Research Appraisal Checklist Approach in the superior paper category (score 205-306). 11 articles were obtained in the superior paper, where all articles explainedthat the support provided by the family was effective in controlling hypertension in the elderly. Support can be in theform of increasing the role of the family through caregiver training, using hypertension care manuals, responding tohypertension with traditional health services, spending time with them, allowing the elderly to freely choose the activities they like, and prioritizing worship activities, distributing attention in terms of affirming taking medication and reducing consumption of high-salt foods and support in monitoring blood pressure in the future age. Family support was effective in controlling hypertension in the elderly. Families are expected to always fully support the elderly with hypertension so that hypertension can be controlled

Keywords--- Family Support; Control hypertension; Elderly

I. INTRODUCTION

Heart disease (cardiovascular) is a major health problem in the world. Hypertension is one of the dangerous health problems worldwide because it is a major risk factor for cardiovascular diseases such as heart attack, heart failure, kidney disease as well as stroke, where in 2016 cardiac ischemic and stroke were the leading causes of death worldwide [1]. One of the most frequent and common cardiovascular diseases carried by the public is Hypertension [2]. WHO estimates that globally the prevalence of hypertension reaches 22% of the total population in the world, described in more detail to be, 18% Americans, 27% African, 25% Southeast Asian, 23% European, 26% Eastern Mediterranean, and 19% for the Western Pacific. WHO (2017) also

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estimates that worldwide 1 in 5 women suffer from hypertension. Larger than males by a ratio of 1 in 4. Based on the main results of [3] the prevalence of hypertension based on measurements in the population aged 18 years and over, Indonesia is 34.1%, for the province of Central Java itself is 37.5%. The status of living for the elderly in rural Indonesia is 41.76% living with three generations (children and grandchildren) and 24.31% living with family, othersliving alone and with spouses [4].

The aging process of the population certainly has an impact on various aspects of life, both social, economic, and especially health, because with age, the function of body organs will decrease both due to natural factors and due to disease and an increase in the Old Age Ratio Dependency [5]. Blood pressure possessed by elderly people tends to be higher whencompared to people who are young. The changes that will be felt by the elderly, especially physiologically, are decreasing various organ functions both due to natural and disease. Some health disorders are felt by the elderly such as the cardiovascular system. The prevalence of hypertension increases with age, regardless of gender, affecting 70% of the general population over the age of 80 [6].

Family support is also needed in self-care management in hypertensive patients, with family involvement in self-carein hypertensive patients, it will help success in hypertension therapy and can affect the spirit of hypertensive patients to maintain their health status[7] . The family is a system, where if one family member has a problem, it will affect the system of other family members, and vice versa [8]

Based on the background above, the formulation of the problem in this study is "How is family support in controllinghypertension in the elderly?". The aims of this study was to present a literature review on the impact of family support on hypertension control in the elderly.

II. METHODS

This research is a research using literature study method or literature review with PICO analysis, namely Patient- Population- Problem, Intervention-Prognostic, Factors / Exposure Comparation-Control, Outcome. The search was conducted using science direct database, proquest, scopus and google scholar with keywords elderly, family support and hypertension control. Article assessment using Duffy's Research Appraisal Checklist Approach in the superior paper category (score 205-306). Article is from issue 2020-2022.

III. RESULT

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Article assessment using *Duffy's Research Appraisal Checklist Approach*

| 0 Journals included in Below Average Paper category (score 0- | 1 Journal included in Average Paper category (score 103-204) | 11 Journals included in the Superior Paper category (score |

Figure 1. Review Structure using Duffy's Research Appraisal Checklist Approach

IV. DISCUSSION

Hypertension is a disease that often occurs in the elderly due to a decrease in body systems, especially in the cardiovascular system. Hypertension in the elderly is high blood pressure which is a medical condition where people whoseblood pressure increases above normal, namely 140/90 mmHg can also experience the risk of morbidity and death [9]. Somerisk factors that can cause high blood pressure are old age and a history of high blood pressure in the family, obesity, high salt levels, and living habits such as smoking and alcoholic beverages. In addition, there are also factors that can cause high blood pressure, namely overweight followed by lack of exercise, and eating fatty foods and high salt content [10] .

The family is the main support system providing direct service to every (healthy-sick) condition of family members. Therefore, the intake of family-focused services/treatments not only restores the patient's state, but also aims to develop and improve the family's ability to overcome health problems in that family. families with seniors have a role to play in helping the elderly. Family members, especially women, play an important role as caregivers in the weak elderly or the elderly who have physical disabilities due to chronic diseases [11].

Research Boonyathee et al., (2021) on The effect of social support family caregiver training programs on changes in blood pressure and lipid levels in the elderly at risk of hypertension in northern Thai communities described the effect of thesocial support family caregiver training program (SSFCTP) on controlling blood pressure, reducing total cholesterol, and improving self-care behaviors among older adults in rural areas at risk of hypertension. Based on the results of the researchTutpai, Unja and Nura (2021), it can be given the conclusion that there is a relationship between family support with health controls of elderly patients in conducting health control to health facilities. Family support is needed by elderly patients to always routinely perform blood pressure control in health facilities during the pandemic as it is today. Health workers, especially nurses, are expected to participate in family empowerment efforts to improve health care efforts, especially elderly patients with hypertension. Family support in controlling hypertension among the elderly includes responding to hypertension with traditional health services, spending time with them, allowing the elderly to freely select the activities they like, and prioritizing worship activities [14]

Based on the results of the research Ayu et al., (2022), Family and cadre empowerment are proven to have a significantinfluence on older adult health status with hypertension in Bali Province. There was an increase in health status in the intervention group before and after the implementation. In addition to the influence of comprehensive care interventions based on empowering cadres and families, health status also increased due to the influencing factor of age in older adults. Thus, the intervention of comprehensive care and the age of the older adults can affect their health status.

As many as 80.6% of the elderly have family support with the motivation of the hypertensive elderly to control hypertension and as many as 85.3% have self-efficasy with the motivation of the hypertensive elderly to control hypertension. The results of statistical tests using Chi-Square by looking at continuity correction, explain that there is a meaningful relationship in family support variables with the motivation of hypertensive elderly in controlling blood pressurewhich can be seen from the results of p value = 0.001 < α (0.05). The results of statistical tests showed a significant relationship between self-efficacy variables and elderly motivation in controlling blood pressure with p value = 0.000<α(0.05) [16].

Based on the results of the research Aprilianawati and Wahyudi (2022), The majority of respondents were highest in the range of 60-74 years at 175 respondents (88.8%), the majority based on female gender at 141 respondents (71.6%), the majority based on high elderly self-motivation at 110 respondents (55.8%) and the majority of high family support at 103 respondents (52.3%). there is a significant relationship between self-motivation and family support with elderly blood pressure control in Limo Depok Village with P-V alue = 0.000 results. For elderly families, it is mandatory to share more attention in terms of affirming taking medication and reducing consumption of foods high in salt and support in monitoringblood pressure in the elderly at least once a week in order to create a better quality of life in the elderly with high blood pressure. Health services must play a very important role in providing promotion and prevention to the elderly who experience high blood pressure in the form of providing insight both related to high blood pressure and prevention and encouraging the elderly to be motivated in maintaining their blood pressure.

Family social support for the elderly with hypertension in Tenggela Village, Tilango District, received good family support as many as 51 respondents (87.9%) and less family social support as many as 7 respondents (12.1%); (2) Quality oflife of hypertensive elderly in Tenggela Village, Tilango District, 52 respondents (87.9%) had good quality of life and 6 (10.3%) poor quality of life; (3) The relationship between family social support and the quality of life of the hypertensive elderly in Tenggela Village. From the results of the study, using the Chi-square test, the p value was 0.001 because the p

value was > 0.005 [18]. In line with research conducted by [19]in his research family support has a positive effect on controlling hypertension with a significance value of 0.000 (< 0.005). It emphasizes that family support can improve health and improve a person's self-care management with family assistance that can be done by providing emotional, instrumental,reward and information support.

[20]in his research found that there were differences in self-efficacy in the elderly with hypertension after being givenfamily empowerment interventions. Intervention is given 3 times a month by coming to the patient's home with educational methods. Research by Dharma et al., (2018) found the influence of family empowerment on the quality of life and capacityfunctioning of the elderly who undergo treatment at home. Education is one way that can be used in providing understanding to families about how to care for the elderly.

V. CONCLUSION

Based on literature studies, family support was effective in controlling hypertension in the elderly. Support can be in the form of increasing the role of the family through caregiver training, using hypertension care manuals, responding to hypertension with traditional health services, spending time with them, allowing the elderly to freely choose the activities they like, and prioritizing worship activities, distributing attention in terms of affirming taking medication and reducing consumption of high-salt foods and support in monitoring blood pressure in the elderly at least once a week in order to createa better quality of life in the elderly with high blood pressure. Families are expected to always fully support the elderly with hypertension so that hypertension can be controlled

CONFLICT OF INTEREST

No conflict of interest has been declared

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APPENDIX

Table 2; Summary of studies on enhancement and impedance factors in discharge planning
implementation athospital.

No	Author	Study	Design	Respondents	Result
1	[12], [13]	Effects of a social support family caregiver training program on changing blood pressure and lipid levels among elderly at risk of hypertension in a northern Thai community	Quasi-experimental pretest-posttest design with an intervention and control group	Elderly : 67 Family : 67	This study described the effect of the social support family caregiver training program (SSFCTP) on controlling blood pressure, reducing total cholesterol, and improving self-care behaviors among older adults in rural areas at risk of hypertension. The results also showed that the participation among the elderly and caregivers in the activities program could increase knowledge and, self-efficacy in personal care of the elderly in the family, and provide confi- dence to strengthen the relationship and communicate with family members on self-care. This study highlights the importance of caregivers andthe long-term benefits for relevant organiza- tions at the community level.
2	[13]	Family Support for Controlling Blood Pressure of Elderly Patients in Health Facilities During the Covid-19 Pandemic in Banjarmasin	quantitative research with a observational research with cross sectional research design	50 family	Based on the results of the research, it can be given the conclusion that there is a relationship between family support with health controls of elderly patients in conducting health control to health facilities. Family support is needed by elderly patients to always routinelyperform blood pressure control in health facilities during the pandemic as it is today. Health workers, especially nurses, are expected to participate in family empowerment efforts to improve health care efforts, especially elderly patients withhypertension.
3	[14]	Family Support in Controlling Hypertension among the Elderly in Lhokseumawe City: A Descriptive Phenomenological Study	qualitative study with a phenomenological approach	8th participant	Family support in controlling hypertension among the elderly includes responding to hypertension with traditional health services, spending time with them, allowing the elderly to freely select the activities they like, and prioritizingworship activities. Efforts are needed from community nurses to provide education on the importance of families in managing the disease. This can

					carried out as an activity in the health promotion program at the Public Health Center, which is integrated with the Prolanis program. Furthermore, it is necessary to increase the skills of health workers in conducting training on the prevention and control of hypertension in old people through assistance during Prolanis. Provision, installation, and dissemination of health promotion media in the form of banners, posters, and booklets about managing the disease with family support can be provided at health centers and distributed to public places. This is expected to increase the knowledge of the community, specifically families who care for the elderly with hypertension.
4	[22]	Relationship between Family Function, Anxiety, and Quality of Life for Older Adults with Hypertension in Low-Income Communities	A cross-sectional survey	363	A significant correlation between anxiety, family function, and QoL was found. Anxiety had a partial mediating effect on the relationship between family function and QoL. Further research should focus on increasing the level of family function and reducing the perceived anxiety of older adults with hypertension to improve their QoL level.
5	[23]	Factors Associated with the Treatment of Hypertension in the Elderly	Descriptive analytics with cross sectional approach	62 orang	Among the 35 respondents who received support from family, there were 17 respondents (48.6%) who did well with hypertension treatment. Among the 27 respondents who did not receive support from family, there were 22 respondents (81.5%) who underwent hypertension treatment. After statistical tests with chi-square tests obtained results $p = 0.029$ ($p < 0.05$), this means that there is a support relationship
6	[15]	Health Status of Older Adults with Hypertension after Family and Cadre Empowerment through Comprehensive Care	quasi experiment with control group design	62 respondents with 31 respondents each in the intervention and control group	Family and cadre empowerment are proven to have a significant influence on older adult health status with hypertension in Bali Province. There was an increase in health status in the intervention group before and after the implementation. In addition to the influence of comprehensive care interventions based on empowering cadres and families, health status also increased due to the influencing factor of age in older adults. Thus, the intervention of comprehensive care and the age of the older adults can affect their health status.
7	[16]	The Relationship of Family Support and Self-Efficacy with the Motivation of Hypertensive Elderly in Controlling Blood Pressure	Descriptive correlation with *cross sectional* approach.	184 people.	As many as 80.6% of the elderly have family support with the motivation of the hypertensive elderly to control hypertension and as many as 85.3% have self-efficasy with the motivation of the hypertensive elderly to control hypertension. The results of statistical tests using Chi-Square by looking at continuity correction, explain that there is a meaningful relationship in family support variables with the motivation of hypertensive elderly in controlling blood pressure which can be seen from the results of p value = $0.001 < α (0.05)$. The results of statistical tests showed a significant relationship between self-efficacy variables and elderly motivation in controlling blood pressure with p value = $0.000 < α(0.05)$.

8	[17]	Self-motivation and family support in controlling blood pressure of hypertensive elderly	Self-motivation and family support in controlling blood pressure of hypertensive elderly	197	The majority of respondents were highest in the range of 60-74 years at 175 respondents (88.8%), the majority based on female gender at 141 respondents (71.6%), the majority based on high elderly self-motivation at 110 respondents (55.8%) and the majority of high family support at 103 respondents (52.3%). there is a significant relationship between self-motivation and family support with elderly blood pressure control in Limo Depok Village with P-Value = 0.000 results. The elderly must have a great self-drive to control their blood pressure so that there are no further high blood complications. For elderly families, it is mandatory to share more attention in terms of affirming taking medication and reducing consumption of foods high in salt and support in monitoring blood pressure in theelderly at least once a week in order to create a better quality of life in the elderly with high blood pressure. Health services must play a very important role in providing promotion and prevention to the elderly who experience high blood pressure in the form of providing insight both related to high blood pressure and prevention and encouraging the elderly to be motivated in maintaining their blood pressure.
9	[24]	The Effect of FamilySupport on Blood Pressure Control Behavior in Elderly Hypertensive Sufferers at Puskesmas Sumbang 1	Quasy Experimental with non equivalen control design	36	There was a difference in the average systole and diastole between the experimental group after being given an intervention guide in the form of a *leaflet* and the control group after without being given a family support intervention guide, which showed that there was an effect of family support intervention on changes in blood pressure in patients with hypertension. The results of the analysis using *paired t test* before and after intervention guidance were given, that there was an effect of family support on blood pressure control behavior in elderly hypertensive patients (*p value* < 0.05). And from the calculation results using the effect *size* formula, effectiveness shows that providing family support intervention guidance has a large effect (0.9) on systole and a moderate effect (0.72) on diastole. The results of the analysis using an *independent t test* on systole and diastole after intervention guidance were given, that there was an effect of family support on blood pressure control behavior in elderly hypertensive patients (*p value* < 0.05). And from the calculation results using the effect *size* formula, effectiveness shows that providing family support intervention guidance has a high effect (2.4) on systole and a high effect (0.98) on distole.
10	[25]	Elderly Hypertension Control Behavior in terms of Family Reward and Emotional Support	Descriptive analytics with *a cross-sectional* approach	111	The results of this study found a positive relationship between family support and hypertension control behavior in the elderly. This study revealed that family support is very important in improving hypertension control behavior in the

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| 11 | [18] | Relationship between Family Social Support and Quality of Life for Hypertensive Elderly in Tenggela Village, Tilango District | Quantitative research with an analytical survey research design with a cross sectional approach | 58 | Family social support for the elderly with hypertension in Tenggela Village, Tilango District, received good family support as many as 51 respondents (87.9%) and less family social support as many as 7 respondents (12.1%); (2) Quality of life of hypertensive elderly in Tenggela Village, Tilango District, 52 respondents (87.9%) had good quality of life and 6 (10.3%) poor quality of life; (3) The relationship between family social support and the quality of life of the hypertensive elderly in Tenggela Village. From the results of the study, using the Chi-square test, the p value was 0.001 because the p value was > 0.005. |

(Top row continuation from previous page:) elderly. This study suggests that family appreciation and emotional support factors can be applied to improve the ability of the elderly to control their hypertension. *(marked 82)*

Anxiety Symptoms And Sleep Disorders In Chronic Obstructive Pulmonary Disease

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Abstract--- Chronic obstructive pulmonary disease is a chronic disease that occurs in all countries around the world. COPD causes sufferers to experience limited activities that can trigger feelings of psychological stress and anxiety. The anxiety felt by COPD patients is very disturbing and can affect the quality of their sleep, while people who are sick need a lot of sleep. This situation makes COPD patients experience ineffective sleep and change their sleep patterns due to feelings of anxiety about the environment and the disease. This study aims to analyze the relationship between anxiety levels and sleep quality in patients with chronic obstructive pulmonary disease. This research is a descriptive correlation with a cross sectional approach. This study involved 30 respondents Sleep quality measurement uses PSQI (Pittsburgh Sleep Quality Index) Questionnaire, while anxiety measurement uses Hamilton Rating Scale of Anxiety. The characteristics of the majority of COPD patients are male and aged 56–65 years. The anxiety level of COPD patients is mostly in the moderate anxiety category. Most of the sleep quality of COPD patients is in the poor category. There is a relationship between the level of anxiety and sleep quality of COPD patients with p=0.002.

Keywords--- anxiety, sleep, copd

I. INTRODUCTION

Chronic obstructive pulmonary disease or commonly abbreviated as COPD is a worldwide disease and is found in all parts of the world. With an increase in mortality, morbidity, and prevalence of COPD, special handling is needed both from prevention and management so that lung function becomes normal. Chronic obstructive pulmonary disease (COPD), is also the highest cause of death among all other diseases ([1]

In 2020, WHO predicts an increase from the prevalence of COPD which was originally ranked 6 to rank 3 in the world for cancer and cardiovascular diseases that claim human lives [2] According to Oktorina et al. (2011), COPD also ranks one which has a pain value of 35% in the group of lung attack diseases2, then 33% from bronchial asthma,

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then 30% from lung cancer, and 2% from other lung attack diseases. Basic health research in 2018 found that COPD (chronic obstructive pulmonary disease) often attacks men and in Indonesia by 3.7%. Central Java had a total of 3,074,607 cases in 2019. In 2019 the number of COPD cases was 1.2% and the number was higher than the prevalence of cancer and chronic kidney failure (Central Java Provincial Health Office, 2019).

GOLD (2021) defines COPD (chronic obstructive pulmonary disease) as a respiratory disease that has persistent clinical manifestations. COPD is caused by the presence of particles that contain significantly toxins. This causes the air entering the body to be limited because the alveolus and airways are abnormal. This disease can be treated and prevented. According to WHO (2016), PPOK develops slowly and can often be seen clearly for patients 50 or 40 years old.

COPD can make sufferers carry out a different lifestyle than usual, besides that activities become limited which triggers feelings of psychological stress. This can also lead to feelings of anxiety triggered by the emergence of stress for medical treatment (Nollen-Hoeksena, 2014). Patients after recovering from severe exacerbations will be hospitalized. The magnitude of this patient's anxiety is greater than that of outpatient COPD patients. The cause of this is that patients who have just been transferred to hospitalization have feelings of trauma from the severe cough and shortness of breath they experience, thus making patients very worried and afraid of the disease they suffer (Pumar et al. , 2014) .

According to research by Hasanah et al., (2016) found the majority of COPD patients with mild anxiety levels of 52% (29 people), with moderate anxiety levels of 27% (15 people), while with severe anxiety levels of 21% (12 people). Respondents with severe depression amounted to 7% (4 people), respondents who were moderately depressed by 52% (29 people), while 41% (23 people) respondents had mild depression. The results of Artaty's research (2019) showed that the anxiety level of respondents in Bintan Regency Hospital was the highest at 38 people (54.3%) and the lowest at 32 people (45.7%). In line with Harahap's research, Afrida Sriyani, (2021) that most respondents' anxiety levels were at a mild level of 41 respondents (57.7%).

The anxiety felt by COPD patients can affect the quality of sleep. This is in line with WHO (2015) argues that several factors such as environment, *life style*, psychological factors, and physical can affect sleep. Difficulty sleeping can also appear in patients whose breathing is disturbed. It is also triggered from abnormalities of the respiratory work system. Some clinical data prove the relationship between sleep and respiratory system disorders. The existence of altered respiratory system functions can interfere with sleep, while sleep also makes the respiratory system function worse (Antariksa, 2012).

II.   METHODS

This study is a descriptive correlation study with *Cross Sectional* approach where data collection concerning independent variables and dependent variables is collected and measured at the same time. This study aims to determine the influence between anxiety levels and sleep quality of COPD patients.

This study involved 30 respondents who were COPD patients. The selection of respondents was taken based on inclusion criteria: Patients aged 18-60 years, diagnosed with COPD medical, and willing to be respondents. The exclusion criteria are: patients who are unconscious, in serious condition, or positive for Covid-19. Sleep quality measurement uses PSQI *(Pittsburgh Sleep Quality Index) Questionnaire,* while anxiety measurement uses *Hamilton Rating Scale of Anxiety.* Statistical tests used to analyze the effect between anxiety levels and sleep quality of COPD patients using the *Chi-Square* test.

III. RESULTS

Table 1: Distribution of respondent characteristics in COPD patients

Characteristic		(F)	%
Age	26-35 years	2	6.7
	36-45 Years	3	10.0
	46-55 Years	9	30.0
	56-65 Years	16	53.3
Total		30	100.0
Gender	Laki-male	20	66.7
	Women	10	33.3
Total		30	100.0

Based on the results of the study, data on the characteristics of respondents based on age were mostly aged 56-65 years amounting to 16 respondents (53.3%), and the lowest were respondents aged 26-35 years amounting to only 2 respondents (6.7%). Based on gender, most of the respondents were male as many as 20 respondents (66.7%) and female as many as 10 respondents (33.3%).

The picture of the level of anxiety experienced by COPD patients is illustrated in table 2 below.

Table 2: Frequency distribution of anxiety levels of COPD patients

Anxiety Level	(f)	%
Mild Anxiety	4	13.3
Moderate Anxiety	18	60.0
Severe Anxiety	8	26.7
30	100.0	

Based on table 2 shows that most respondents experienced moderate anxiety as many as 18 people (60%) and respondents who experienced mild anxiety as many as 4 people (13.3%).

Table 3 : Frequency distribution of sleep quality in COPD patients

Sleep Quality	(f)	%
Good	9	30.0
Bad	21	70.0
30	100.0	

Based on table 3 shows that most of them are respondents who have poor sleep quality as many as 21 people(70.%) and respondents who have good sleep quality as many as 9 people (30%).

Table 4 : The relationship between anxiety levels and sleep quality in COPD patients

Anxiety Level	Sleep quality				Sum	p	X²
	Good	%	Bad	%			
Mild Anxiety	4	13.3	0	0	4	0.002	12.804
Moderate Anxiety	5	16.7	13	43.3	18		
Severe Anxiety	0	0	8	26.7	8		
Sum	9	30.0	21	70.0	30		

Table 4 shows that none of the respondents who experienced mild anxiety (0%) experienced poor sleep quality, while respondents who experienced moderate anxiety mostly experienced poor sleep quality, as many as 13 people (43.3%). The test results using *chi square* obtained a p value of 0.002 with (p < 0.05) and an X² value of 12.804 so that it can be concluded that there is a relationship between anxiety levels and sleep quality of COPD patients.

IV. DISCUSSION

The results showed that the majority of COPD patients aged 56-65 years amounted to 1.6 respondents (53.3%). This shows that most respondents are in early adulthood. According to the researchers' assumptions, the older the more physical condition decreases, one of which results in lung disease. This is in accordance with Nugroho (2012) in general, the age after 40 years will experience a decrease in physical, psychological and social conditions. The decline in physical and psychological conditions from the history of previous lifestyles will be susceptible to disease.

The elderly experience decreased lung function due to osteoporosis, respiratory muscle weakness, pulmonary blood vessel distention, airway calcification, enlarged alveoli, and decreased ciliary function which causes an increased risk of respiratory problems, especially in the elderly (Potter PA, Perry, 2015).

Based on the results of the study showed that the majority of respondents experienced moderate anxiety as many as 18 people (60%) and respondents who experienced mild anxiety as many as 4 people (13.3%). This shows the average anxiety of COPD patients with moderate category.

According to Asmadi, (2018) often in lung disease patients there is a problem where tension conditions arise then affect psychological disorders and can lead individuals to anxiety. This anxiety is very common in chronic respiratory diseases. Anxiety can also be a heavy burden that causes the individual's life to always be under the shadow of prolonged anxiety and considers anxiety as mental tension accompanied by body disorders that cause a sense of unawareness of threats, anxiety related to physiological and psychological stress.

Based on the results of the study showed that most of the respondents who had poor sleep quality as many as 21 people (70.%) and respondents who had good sleep quality as many as 9 people (30%). This is according to the assumption of researchers shows that the majority of patients with lung infections cannot sleep well so that patients tend to experience fatigue and are not fit in carrying out daily activities. This is likely to be caused by one of the factors of old age. Increasing age causes a decrease in the function of the neurological system, causing the distribution of norepinephrine as a sleep-stimulating substance to decrease and affect the sleep cycle, namely a decrease from the sleep period (Potter PA, Perry, 2015; Prayitno A, 2016).

According to Khasnah & Hidayati, (2012) Sleep quality includes quantitative aspects such as sleep duration, sleep latency, as well as subjective aspects such as sleep and rest. Sleep quality is a state when a person easily initiates sleep and maintains sleep, factors that can affect sleep quality are physiological, psychological, environmental and lifestyle (Potter & Perry, 2010).

Based on the results of the study showed that respondents who experienced mild anxiety none (0%) experienced poor sleep quality while respondents who experienced moderate anxiety mostly experienced poor sleep quality as many as 13 people (43.3%). According to the assumption of researchers shows that the more severe the level of anxiety, the worse the quality of sleep experienced by COPD patients. This is supported by the opinion (Maramis, 2015) Mental disorders that are closely related to sleep disorders are anxiety. The presence of anxiety can cause psychological symptoms such as difficulty concentrating, forgetfulness, empty thoughts, feeling tense and restless, irritable, sensitive, impatient, loss of confidence, tend to do things repeatedly, and difficulty sleeping.

The test results using *chi square* obtained a p value of 0.002 with (p < 0.05) and an X^2 value of 12.804 so that it can be concluded that there is a relationship between anxiety levels and sleep quality of COPD patients. This means that anxiety affects the quality of a patient's sleep. The state of anxiety or stress that an individual experiences affects an individual's ability to sleep or stay asleep. Previous research has shown that moderate and severe stress levels are strongly associated with low sleep hours and are associated with the incidence of nightmares and sleep disturbances. Emotional

can cause feelings of tension and hopelessness in individuals, these feelings can cause individuals to have difficulty falling asleep or often wake up during sleep (Patricia A. Potter, 2015).

Psychological stress is one of many factors that affect sleep quality. There is a feeling of stress, the sympathetic nerves will increase and sleep can be disrupted (Damanik, 2020). This was also revealed by Setyawan (2017) who stated that several factors such as drugs, urges, feelings of anxiety, *life style*, environment, and diseases suffered can make thequantity and quality of sleep disrupted.

Sleep quality varies from individual to individual due to sleep latency, reduced sleep efficiency, waking up early, difficulty returning to sleep, mind load, and anxiety about the situation that is happening [10]. According to Hasanah et al (2016) there are four factors that affect sleep, namely psychological, physical, environmental and lifestylefactors. A person with respiratory disorders can have difficulty sleeping due to disruption of the structure of respiratoryfunction.

V.   CONCLUSIONS

Based on the description of the results and the discussion above, researchers can conclude that most of the COPD patients aged 56-65 years and are male, have moderate anxiety levels, with poor sleep quality. The results of statistical tests show that there is a relationship between anxiety levels and sleep quality of COPD patients with p = 0.002.

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Improving Developmental Of Stunting Children With Psychososial Stimulation: A Literature Review

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Abstract--- Stunting has became an important problem in the world today. Stunting or poor linear growth (height-for-age-Z score ≤ -2) is considered to be a major public health problem among children globally Approximately 151 million (22%) children under five-years-old in 2017 were affected by stunting. One of the problems that can occur in children with stunting is developmental problems. The aim of this study was to determine the effect of psychosocial stimulation on stunting children. This study using the method of literature study or literature review with PICO analysis. The search used the researchgate, sciencedirect, proquest and pubmed databases with the keywords stunting , psycososial stimulation and development children . Article assessment using Duffy's Research Appraisal Checklist Approach in superior paper category (score 205-306). There were 10 articles included in the superior paper where all article Obtained 10 articles included in the superior paper, where all articles explained that psychosocial stimulation can improve children's development. An increase in language development was found in 2 articles an another article showed an increase in gross motor and fine motor aspects. Psychosocial stimulation is one of the methods to improve developmental abilities in children with stunting. Psychosocial stimulation can be done to stimulate or improve developmental abilities in children with stunting problems along with support from the family.

Keywords-- *Psychosocial Stimulation; Development Children*

I. INTRODUCTION

Stunting has become an important problem throughout the world today. Childhood stunting is an overall indicator of a child's well-being and an accurate reflection of social inequality. Children with stunting can make problems from the aspect of growth and development. Stunting is a condition of a child whose height is below normal, which is less than -2 standard deviations from the WHO

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standard median [1].

Stunting or poor linear growth (height-for-age-Z score ≤ -2) is considered to be a major public health problem among children globally Approximately 151 million (22%) children under five-years-old in 2017 were affected by stunting. More than half of children with stunting are from Asia stunted children are affected by poor nutrition in-utero and early childhood, as well as frequent infections before or after birth and therefore have a greater risk for illness and death. Research shows that stunted children may never reach their full potential height and have poor cognitive development leading to suboptimal educational performance and reduced intellectual capacity, motor and socioeconomic development [2].

In several South Asian countries, children who experience stunting are less likely to develop on the track in terms of cognitive/knowledge [3]. Children with stunting also increase the risk of abnormal development in children [4]. An important period in the growth and development of children is when they are under five years old or toddlers. This toddler period is a very important period because it is a fundamental thing that will influence and determine subsequent growth and development, therefore growth and development during toddlerhood must be optimal. Early childhood development is the basis for school readiness, educational achievement, national productivity and social capital[5].

Stunting will have an impact on the quality of human resources because body organs, especially the brain, cannotgrow and develop optimally (Bappenas, 2018).

Research on child stunting in Jamaica indicates that stimulation has a greater effect on child motor development than nutrition, whereby children with stunting sees an increased score on mental and motor development at the same level with normal children after receiving stimulation and supplements [6]. The condition of stunted children with delayed growth and development requires intervention to overcome the problem. Delays in growth and development can be stimulated by giving stimulation as early as possible. Children are considered to be in accordance with standards / on track in the cognitive and social emotional domains if they meet the criteria for child development according to their age. Stimulation of growth and development in children needs to be done early so that children can grow and develop according to their age standard. The importance of stimulation in children is to maximize the function of brain development abilities according to age stages. The development of synapses in the brain will be maximized if stimulation is routinely carried out during the golden periode of 1-3 years.

Stunting is still being overcome in the biological dimension by emphasizing on food-based nutrition interventions and breast milk. Based intervention psycho-social approach is not much done. Various studies stated that the potential for stunting children is can be repaired through a lot ways a part from the physical and biological aspects. One of the aspects that can developed is the aspect of social behavior through psychosocial interventions.Relationships between stunting and development psychosocial from birth to age preschool in South Africa revealed that the child Stunting will be very influential on functional impairment cognitive [7].

Based on the phenomenon above, the formulation of the problem in this study is how psychosocial stimulationcan increase developmental abilities in children with stunting.

II. METHOD

This research is a study using the literature review method with PICO analysis, namely Patient-

Population- Problem, Intervention-Prognostic Factors/Exposure, Comparation-Control, Outcome. The search was carried out using the researchgate, sciencedirect, proquest and pubmed databases with keywords stunting, development children, phsicosocial stimulation. The assessment of the article used the Duffy's Research Appraisal Checklist. Approach in the superior paper category (score 205-306). Article is the 2018-2023

III. RESULT

The database search results obtained 10 suitable articles, along with a full description of the article addressed in Table 1

IV. DISCUSSION

There were 10 articles included in the superior paper where all article Obtained 10 articles included in the superior paper, where all articles explained that psychosocial stimulation can improve children's development. Psicosocial stimulation can Increase of scores in term of child's motor, cognitive, socio-emotional, and moral development of children [8]

With psychosocial stimulation at home and facilities at play groups influenced significantly to motor development and cognitive development of children at both group. There is any factors influenced to child's socio emotional development were psycho social stimulation at home and facilities provided at play groups, while moral development was possitively influenced by facilities and method at play groups. In contrast an increasing of program for child's competency was likely to decrease moral development score of children.[9]

Inadequate early childhood development leads to poor school performance, low adult incomes, intergenerational transmission of poverty, and negative impact on national development [10]

Learning stimulation is an activity and also tools or props that can be used for the intellectual development of children. Stimulation Language is a two-communication ability.Home environment can to increase stimulate for children and more increase development stunting.children [11]

direction between the child and the closest person such as mother and caregiver. On environmental parameters Physical assessment is an assessment of the condition of the building child's place of residence. For warmth and acceptance that is a harmonious relationship between children and loved ones. Academic stimulationis the ability of parents to get encourage children to think

V. CONCLUSIONS

Psychosocial stimulation is one of the methods to improve developmental abilities in children with stunting and centered with family support.

CONFLICT OF INTEREST

This research have not conflict of interest

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Table 1. Article database search results with a score of 205-306

No	Author	Title	Design	Responden	Measurement	Result
1	Sukmawati &Rowa (2020)	The Effect of child psychosocial stimulation on gross and fine motor development and the increase of stunting children's body weight age 2-3years	Quasi- experimental design withPre Post TestControl Group Design.	30 responden	Observation	There is an influence of children's psychosocial stimulation on gross motor development and fine motor development in Stunting toddlers aged 2-3 years with a value of P value = 0,000 and P value = 0.001. There was no influence of children's psychosocial stimulation on weight gain of Stunting children under the age of 2-3 years with a P value = 0.089.
2	Dwinataningtyas& Kumalasari , 2020	The Effects of Stunting And Psychosocial Stimulus On The Development of Children Between The Age Of 2- 6 Years Old	observational analytical research with acase control	60 responden	Pre-Screening Developmental Questionnaire	Stunting and psychosocial stimulation variables have a significant influence on the development of a child (p<0,05)
3	Fathadika& pujiati 2023	Psycho-social stimulation effect on socio-emotional development of stunted children in Central Aceh	quantitative approach witha correlation cross-sectional	100 responden	Ages & Stages Questionnaires: Social-Emotional, Second Edition (ASQ: SE-2) tomeasure children's socioemotional development and The Early Childhood Home Observation for Measurement of Environment (ECHOME)	language stimulation affected socio-emotional development (p= 0,003). Overall psycho- social stimulation does not affectthe socio-emotional developmentof stunted children in Central Aceh, and only language stimulation significantly affects socio-emotional development
4	Muhoozi et al,2017	Nutrition, hygiene, and stimulation education to improve growth, cognitive, language, and motor development among infantsin Uganda: A cluster-randomized tria	cluster- randomized trial,	511 responden	anthropometry and scores on the 2 developmental scales: Bayley Scales of Infant and Toddler Development-III and the Ages and Stages Questionnaire	The intervention educationdelivered to mothers promoted early development domain incognitive, language,and motor development but not linear growth of small children in impoverished rural communities in Uganda
5	Tessema et al,2019	The effects of psychosocial stimulation on the development, growth, and treatment outcome of	cluster- randomized controlled trial	144 respondent	anthropometricZ-scores	supplementary evidence regarding the effect of psychosocial stimulation interventions on the developmentand growth outcomes of childrenwith SAM.

No	Author	Title	Design	Responden	Measurement	Result
		children withsevere acute malnutritio nage 6–59 months in southern Ethiopia: a parallel group cluster randomized control trial (EPSoSAMC study				
6	Dwi hastuti(2009)	Psycho Social Stimulationin Play Groups and Its Effect to Motor, Cognitive, Socio-Emotional, and Character Development Child's	prospective cohort study	89 respondent	observation	increase of scores in term of child's motor, cognitive, socio-emotional, and moral development of children from theboth group. Age of child, psychosocial stimulation at home and facilities at play groups influenced significantly to motor development and cognitive development of children
7	Rahmawat i & Agustin ,2020	Analysis of differences in parameters of psychosocial stimulationin stunting and normal toddlers	Quasi experimental	50 respondent	Measurement of psychosocial stimulation was using the Home Observation for Measurement of the Environment Revisited (HOME) questionnaire consists of 55 statements divided into 8 aspects.	Psychosocial stimulation was associated with the incidence of stunting There are differences in the stimulation parameters toddler learning, variation of stimulation in children, and positive punishment. Meanwhilein parameters language stimulation, physical environment, warmth and acceptance, academic stimulation, and modeling makesno difference.
8	Primasari & keliat2020	Parenting practices as prevention of stunting impact in childrens psycosocial development	Systematic review	5 journal	Prisma method	practicing active and responsive parenting practices in children can improve childhood development
9	Jessica et al 2017	Understanding the Association between Stunting and Child Development in Low-and MiddleIncome Countries: Next Stepsfor Research and Intervention	Quasi experimental	comprehensiv e review of key databases in public health, economics, socialscience, and psychology (PubMed, Web of Science, PsycInfoand Embase	Observation	impact of stunting oncognitive development, schooling and learning outcomes, the evidence that stunting leads to deficits in motor and psychosocial development
10	Hartinger et al,2020	A factorial cluster-randomised controlled trial	Eksperimental	317 responden	. observation	The analysis revealed that more than 25% ofmothers completed primary education, a large proportion of children were stunted and diarrhoea prevalence was above18%

No	Author	Title	Design	Responden	Measurement	Result
		combining home-environmental and early child development interventions to improve child health and development: rationale, trial designand baseline findings		95		

The Effectiveness Of SI-MONTOK Program (Education, Monitoring, PMT And Visits By Posyandu Cadres) In Preventing Stunting For Children

Shifa Ayu Wardani[1], Yuliana Ika Safitri[1], Anggun Ikhtiarni[1], Bagus Ananta Tanujiarso[2], Prita Adisty Handayani[2]

Abstract--- *Stunting is a problem of lack of nutritional intake prolonged and results in growth problems in the child or child dwarfed by his age standard. Maternal and child nutrition is an important determinant of growth. The contribution of health workers in preventing stunting too play an important role in reducing the incidence of stunting. This study used a quasi-experimental design with one group pre-test post-test. Sampling technique using total sampling with a total sample of 16 children under age two years (baduta). The interventionin this study by providing the SI-MONTOK program (education, monitoring, PMT and visits by cadres) for 4 weekswhere PMT is given every day and the test used in this study was to use a paired t-test. Based on statistical tests using paired t-test the results obtained are t count > t table with a p-value of <0.001 so that it can be concluded that the "SI-MONTOK" program was effective in preventing stunting for children. Body weight after the intervention experienced an average increase of 0.6187 kg and the average height after the intervention an increase of 2,063 cm. The SI-MONTOK program is effective in prevention of stunting so that it can be implementedin children, especially in clown. The participation of health workers, posyandu cadres and parents is the main keyto stunting prevention.*

Keywords-- *SI-MONTOK Program; Stunting; Children.*

I. INTRODUCTION

Stunting is a chronic malnutrition problem caused by a lack of nutritional intake for quite a long time, resulting ingrowth disturbances in children, where the child's height will be lower or shorter (dwarf) than the standard age (1). Stunting can affect a child's development starting from the early stages of conception up to the third or fourth year of life, where maternal and child nutrition is an important determinant of growth (2).

Global prevalence in 2020 shows 22% or as many as 149.2 million toddlers experiencing stunting (3). On the Asiancontinent itself, there are several countries that have stunting prevalence rates above 30%, namely India, Laos, Timor Leste, and Indonesia (4). The Asian Development Bank (ADB) reports that Indonesia is the second highest in SoutheastAsia with stunting under five, the prevalence of which reaches 31.8% in 2020 (5). Not apart from the problem of stunting, the mayor of Semarang revealed that around 3.1%

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or around 1,367 childrenwere stunted. This is closely related to the fact that there are still many parents who do not understand nutrition for (5).Nutritional status is a measure of meeting nutritional needs obtained from food and drink intake by the body (6). Nutritional stunting is caused by a lack of maternal nutrition, intrauterine malnutrition, lack of breast milk intake up to 6 months of age, lack of provision of quality and/or quantity complementary food, and disruption of nutrient absorption caused by infectious diseases (7).

Previous research has shown that mother's knowledge and parenting style, nutritional intake, low birth weight, and economic status are indicated as factors causing stunting in the golden age of children (8). Individuals with stuntinghave long-term effects such as poor cognition, loss of productivity, and an increased risk of chronic disease in adulthood (7). Therefore, the importance of the contribution of health workers in preventing stunting is highly expected in order to reduce the incidence of stunting. So this research is important to find out the effectiveness of the "SI-MONTOK" program (education, monitoring, PMT and visits by cadres) in preventing stunting to children.

II. METHOD

This study used a quasi-experimental design with a one group pretest posttest approach (9). This design does not use a comparison group (control), but at least the first observation (pretest) has been carried out which allows testing thechanges that occur after the experiment (program) (10). Thus, the results of the treatment can be known more accurately because they can compare conditions before and after being treated (9). The population in this study were children aged 1-24 months (baduta) with a total population of 16 children. The sample used in this study was the entire population or 16 children aged 1-24 months (baduta). Meanwhile, the sampling technique used in this study is using the total sampling technique. This technique is used because the population is relatively small or less than 30 respondents. This is often done by researchers to make generalizations with relatively small errors (11). The tools used to collect data in this study were observation sheets and anthropometric tools. Univariate analysis aims to explain or describe the characteristics of each research variable. In general, this analysis only produces frequency distributions and percentages. Univariate analysis in this study included gender and gestational age. The bivariate analysis was carried out to test whether there was an effect of the "SI-MONTOK" program on body weight and height in under-fives before and after the intervention.Bivariate analysis was performed using paired t-test.

III. RESULT

Based on the frequency distribution table 4.1, it can be seen that of the 16 respondents, the majority were male asmany as 13 respondents (81.3%). Judging from the characteristics of respondents based on gestational age, as many as 15 respondents (93.7%) had gestational age in the category term or 38-42 weeks old.

Based on statistical tests using the paired t-test, the results obtained were t count > t table, and a p-value of <0.001so that it can be concluded that the "SI-MONTOK" program is effective in preventing stunting. Where the weight afterthe intervention experienced an average increase of 0.6187 kg and the height after the intervention experienced an average increase of 2.063 cm.

Table 1. Characteristic Respondent Baduta RW 05 Tawang Mas (n=16)

Characteristics of Respondents	Frequency	Presentase (%)
Gender		
Man	13	81.3
Woman	3	18.7
Total	16	100

Gestational Age		
Pre-term	1	6.3
Term	15	93.7
Post-Term	0	0
Total	16	100

Table 2. Statistical Test Resultspaired t-test Body Weight and Length Before and After Intervention (n=16)

Variable	Mean	SD	T Count	P-value
BB before intervention – BB after intervention	-0.6187	0.3987	-6.208	<0.001
PB before intervention – PB after intervention	-2.063	1.124	-7.342	<0.001

IV. DISCUSSION

1. Characteristics of respondents based on gender and gestational age

Based on the results of the study it can be seen that some of the respondents were male as many as 13 people (81.3%).Boys have a larger body size so they need more energy. Lack of energy in equal amounts for boys and girls causes boys to have a higher risk of stunting than girls (12). The results showed that 15 respondents (93.7%) were born with a gestational age of 38-42 weeks. Babies born at a mature age will reduce the risk of low birth weight babies (LBW) whereLBW has a relationship with the occurrence of stunting in children aged 6-23 months (13). This is supported by the results of other studies which state that babies born with LBW have a 1.74 times the risk of experiencing growth retardation (TB/U) (14).

2. The effectiveness of the "SI-MONTOK" program in preventing stunting

Based on the results of statistical tests, it showed that there was an effect of the SI-MONTOK program on children's weight and height (p value <0.00) as indicated by the average increase in children's weight and height after the intervention. Providing education is one of the main things in this program, in which community knowledge increases after counseling is carried out regarding the importance of knowing and preventing stunting. Good knowledge can improve health behavior so that people can prevent stunting early (15). In addition, it is necessary to monitor the nutritional status of children, this is supported by a supplementary feeding program that focuses on macro and micro nutrients, where the PMT program has a permanent impact on children's development (16). Provision of supplementaryfood is proven to increase body weight and increase in height, this is supported by the results of previous studies whichstated that a lack of intake of zinc, amino acids and iodine can cause editing (17). This study also involved the participation of Posyandu cadres in stunting prevention. Posyandu cadres are the prime mover of all activities carried out at the posyandu so that the presence of cadres is very important and strategic. Services provided with cadres will gain sympathy from the community which can have positive implications for community care and participation (18).

V. CONCLUSION

Based on the research that has been done, the conclusions are as follows:

1. Respondents in this study were children aged 1-2 years (baduta) with a total of 16 respondents, the majority ofrespondents were male (81.3%), while the gestational age was at term (93.7%).

2. Respondents weight after the "SI-MONTOK" program had an average increase of 0.6187 and their height after theintervention had an average increase of 2.063.

3. The "SI-MONTOK" program is effective in preventing stunting (p value < 0.001).

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Healthy Eating Index and Nutritional Status Of Pregnant Women in Sidorejo Lor Community Health Center

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Abstract--- Maintaining good nutritional status during pregnancy is crucial for the health and well-being of both the mother and the fetus. A balanced diet that meets the nutritional need of pregnant women is essential to ensure fetus optimal growth and development, as well as to prevent adverse outcomes during pregnancy. Several studies has shown that pregnant women with good nutritional status have lower risk of giving birth to undernourished babies. In addition, poor maternal nutrition during pregnancy can cause long-term effects on the child's health, including an increased risk of chronic diseases later in life. The purpose of this study to aims to analyze the quality diet by Indonesian adapted-Alternate Healthy Eating Index for pregnancy (AHEI-P) and nutritional status using mid upper arm circumference (MUAC). This research used a quantitative research method with a cross-sectional design located at the Sidorejo Lor Community Health Center, Sidorejo District, Salatiga City, Central Java. The sample are 46 individuals who were selected using the purposive sampling technique. The quality of the diet was assessed using the Indonesian adapted-Alternate Healthy Eating Index for pregnancy (AHEI-P) based on the results of a repetead recall 24-h. Data were analyze by using pearson correlation. Data shown that 15.2% of the subjects were found to suffer from chronic energy deficiency. According to AHEI-P analyses the average AHEI-P score was 41.57±11.98. Most of the subjects had poor dietary quality (82.6%). Respondents with chronic energy deficiency had the lowest mean score for AHEI-P but no significant correlation (p>0.05) was found. Overall, respondents need to improve their dietary quality. This will be important to increase AHEI-P scores which in turn will affect the improvement of pregnant women nutritional status.

Keywords-- Alternate healthy eating index for pregnancy; chronic energy deficiency; dietary quality; pregnant women

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I. INTRODUCTION

Pregnant women play a crucial role in the future growth and development of their babies and toddlers. It's important for them to meet both their own nutritional needs and the needs of their growing fetus. The

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health and nutritional statusof the mother directly affects the growth and development of the fetus. When the mother's health and nutrient intake are good, the health of both mother and fetus is also good. On the contrary, poor nutrient intake and health status of the mother can negatively impact the growth and development of the fetus [1]. During pregnancy, the nutritional status of the mother can greatly influence the growth and development of the fetus. The weight of the mother should increase proportionately with the gestational age, since the appropriate weight gain is related to the normal weight gain of the fetus. In developed countries, the average gestational weight gain (GWG) is around 12-14 kg. However, the results of alongitudinal study show that the average weight gain of mothers during pregnancy is only 7.5 kg [2], [3].

One of the malnutrition problem that still receives attention is chronic energy deficiency (CED) in pregnant women.According to the results of Riset Kesehatan Dasar (RISKESDAS) in 2018, the prevalence of CED in pregnant women of reproductive age in Indonesia is 17.3%. In Central Java, the prevalence rate of CED in pregnant women of reproductive age is higher than the national prevalence rate, at 20% [4]. CED in pregnant women can lead to weakenedmuscles that assist the delivery process, resulting in prolonged and difficult labor, premature labor, postpartum bleeding,infection, and even maternal death [5]–[7]). CED in pregnant women can also hamper fetal growth and development, low birth weight, stunting, and the risk of non-communicable diseases in the future [1], [8]–[10].

The quality of the diet is related to the nutritional status of pregnant women. Based on research results, sufficient energy and protein intake during pregnancy needs attention, especially in rural areas. The Individual Food Consumption Survey (SKMI) in 2014 found that more than half of pregnant women in Indonesia had insufficient energy and protein intake compared to recommended levels [11]. However, some studies have shown that pregnant women have adequate energy and protein intake. The fulfillment of energy and protein intake indicates that pregnant women focus on the quantity of consumption [12]. Previous studies have shown that in addition to quantity, the quality of the diet should also be considered [13]. Studies have shown that improving diet quality has a 53% lower risk during pregnancy [14]. This study aims to analyze the quality of the diet of pregnant women using the Indonesian adapted-Alternate Healthy Eating Index for pregnancy (AHEI-P) [13]. In addition *The purpose of this study to aims to analyze the quality diet by Indonesianadapted-Alternate Healthy Eating Index for pregnancy (AHEI-P) and nutritional status using mid upper arm circumference (MUAC).*

II. METHOD

This study is an observational study with a cross-sectional design conducted from February-April 2022. The research location is at the Sidorejo Lor Community Health Center, Salatiga City, Central Java, Indonesia. Sampling was done using purposive sampling based on inclusion and exclusion criteria. The inclusion criteria in this study were pregnant women in the second and third trimesters, with exclusion criteria including: 1) living outside the Sidorejo Lor Community Health Center service area; 2) having pregnancy complications. The sample size was 46. This study has obtained ethical approval from the Satya Wacana Christian University ethics commission with No. 011/KomisiEtik/EC/2/2022. Informed consent was obtained from each participant before they enrolled on the study.

Food consumption data from participants was gathered using a 2 x 24 hour recall questionnaire with standardized guidelines and a food book photo to aid in estimating food quantity consumption. The data was collected through interviews with respondents. The questionnaire was used to determine a mother's

daily food consumption, with researchers assisting in recalling the food consumed within repeated recall 24 hours. The recall was conducted on both weekdays and weekends. The data obtained was evaluated using the Indonesian Adapted-Alternate Healthy Eating Index for pregnancy (AHEI-P), with each nutrient analyzed to obtain a diet quality score. AHEI-P consists of 9 indicators, including vegetables, fruits, the ratio of red meat and white meat consumption, fiber, trans fat, the ratio of polyunsaturated fatty acids to saturated fatty acids, folate, calcium, and iron from food. Each indicator has a maximum score of 10, resulting in a total score of 90. The food-based intake assessment does not include vitamins and minerals from supplements or non-food, and alcohol is excluded as it is not recommended during pregnancy. Alcohol consumption is also very low among pregnant women in Indonesia. AHEI-P does not include nuts and soy protein components, as women may avoid nuts during pregnancy due to concerns about allergen sensitization. Poultry and fish are categorized as white meat, while beef, lamb, and processed meat are classified as red meat. AHEI-P fit Indonesian dietary guidelines was also used for comparison. In AHEI-P, maximum score criteria for fiber and iron were adjusted to 30 and 37 g/day, respectively [13], [15]–[17]. AHEI-P scores were calculated according to the method described by AHEI-P were classified based previous research. The following cut-off points were established for each: Poor (<55), needs improvement (55-88) and high (>88). AHEI-P were validated by comparing them to the Mean Adequate Ratio (MAR) [13], [15], [16].

We gather information on nutritional status by taking anthropometric measurements, specifically measuring the Mid Upper Arm Circumference (MUAC) with a measuring tape. Pregnant women with MUAC measurements <23.5 cmare classified as having CED, while those with measurements of □23.5 cm are considered normal. To examine the relationship between nutritional status and the diet quality, we utilize the Pearson correlation test.

III. RESULT

Most of the pregnant women who participated in this study were between the ages of 20 and 35 (78.26%), which is generally considered a safe age range for pregnant women (Table 1). Previous research has shown that the age of the mother during pregnancy is associated with the likelihood of maternal malnutrition [18]–[20]. A majority of the respondents were in their second trimester and had a low level of education, with most not having completed high school. More than half of the respondents were homemakers. In addition to maternal age, gestational age, level of education, and employment status are all factors that can increase the risk of maternal malnutrition[20].

Table 1. Overview of respondents' characteristics

Characteristics	n	%
Mothers Age		
High Risk (<20 Aged & >35 Aged)	10	21,74
Low Risk (20-35 Aged)	36	78,26
Gestational Age		
Second Trimester (14-27 weeks)	25	54,3
Third Trimester (>27 weeks)	21	45,7
Level Of Education		
High Education (>SMA)	20	43,5
Low Education (≤SMA)	26	56,5
Employment Status		
Housewife	20	43,5
Working mom	26	56,5

Table 2. Distribution of Minimun, Maximum, Mean and Category of AHEIP

AHEI-P score	Value
Minimum	20.26
Maximum	83.73

Mean	41.57□11.98

<table>
<tr><td>AHEI-P Category</td><td>Value (n(%))</td></tr>
<tr><td>Poor (<55)</td><td>38(82.6)</td></tr>
<tr><td>Need Improvements (55-88)</td><td>8(17.4)</td></tr>
<tr><td>High (>88)</td><td>0(0)</td></tr>
</table>

Table 3. Distribution of AHEIP's Component

Component	Score AHEI-P		
	Mean±SD	Min	Max
Vegetable	1,08±0,73	0,13	3,78
Fruit	3,76±2,87	0	10
White to red meat ration	2,62±1,73	0	8,75
Fiber	5,67±2,9	0,52	10
Trans fat	9,7±0,99	5	10
Unsaturated to saturated fat ration	6,3±2,13	2,15	10
Calcium	4,07±2,67	0,54	10
Folate	3,52±2,40	0,43	10
Iron	4,3±2,36	0,81	10

This study found that 82.6% of the total respondents have poor quality diets and none have high quality diets. The lowest value of the AHEIP is 20.26, which is far from the upper limit cut off value of the poor diet category. The average value of the AHEIP among respondents is 41.57±11.98, which is a cause for concern and requires improvement (Table 2).

According to the AHEI-P component scores, it appears that the respondents are not consuming enoughvegetables. The maximum score obtained is 3.78 and the minimum score is 0.13, with an average score of 1.08, whichfalls short of the score for 1 serving of vegetables. The respondents are also not consuming enough fruit, with a minimum score of 0 and a maximum of 10, and an average score of 3.76, which is equivalent to 1.5 servings of fruit, whereas the optimal intake is 4 servings for the maximum score. The ratio of white meat and red meat shows that the respondents tend to consume tofu, tempeh, and white meat, with a minimum score of 0 and a maximum score of 8.75,and an average score of 2.62, which is still far from the maximum score. The consumption of red meat is rare in thisstudy (Table 3).

As for fiber consumption, the respondents scored a minimum of 0.52 and a maximum of 10, with an average of5.67, indicating that the respondents are only consuming half the maximum value on average. Trans fat consumptionshows a minimum score of 5 and a maximum score of 10, with an average of 9.7, indicating that the respondents consume a lot of trans fats(Table 3).

The ratio of Polyunsaturated fatty acids (PUFA) and Saturated fatty acids (SFA) received a minimum value of 2.15 and a maximum of 10, with an average of 6.3, indicating that while the score is not terrible, there is still room for improvement. The calcium component scored a minimum value of 0.54 and a maximum of 10, with an average of 4.07, which shows that, on average, the respondents have not reached half of the maximum score. The same appliesto the scores obtained for the folate and iron components, where on average the respondents do not score half of the maximum score (Table 3).

This study found no correlation between diet quality and CED. No respondents with high quality of diet. According to cross-tabulation results that indicate that majority of respondents with CED and normal nutritional status needs to improve their quality diet (Table 4).

IV. DISCUSSION

The nutritional needs of pregnant women increase during pregnancy to meet the metabolic and physiological changes and fetal development. Inadequate intake of energy, protein, fat, and carbohydrates can affect fetal growth andbirth weight. Additionally, micronutrient needs also increase and must be met [1]. According to the World Health Organization (WHO) (2012), a pregnant woman's diet should be

balanced and nutrient-dense. Adequate nutrition duringfetal development is important for the long-term physical health of the child. It is during this stage that an adequate supply of nutrients is critical for both the mother and her unborn child. Pregnancy is a critical period for programming the health of future populations [2], [21]–[23].

The results of this research indicate that pregnant women consume the least amount of vegetables, which is consistent with previous studies [2], [13]. In fact, some pregnant women consume as little as 0.13 servings of vegetables, falling short of the recommended daily serving of 1 size. The data also shows that vegetable consumption among the Indonesian population remains low at 57.1 grams per person per day, while fruit consumption is at 33.5 gramsper person per day. Among the vegetable group, green vegetables are the most consumed (79.1%) in comparison to othervegetables. However, the inadequate consumption of vegetables and processed fruits, as well as fruits and processed fruits, can lead to a deficiency in essential vitamins and minerals that are crucial for the body's health [11].

The consumption of meat is associated with a healthy and varied diet due to its profile of fat, protein, and iron (Fe). In the AHEIP assessment, meat consumption is categorized into two types: white meat and red meat. Poultry and fish fall under the white meat category, where a higher consumption of white meat is believed to be a protective factor against metabolic diseases [24]. The average ratio of white meat consumption to red meat is low at 2.62. This is attributed to thefact that the population in Central Java tends to consume processed soy-based vegetable protein sources like tofu and tempeh instead of red meat [25]. This finding is consistent with previous studies that indicate a low diversity in food consumption[26].

Unfortunately, consumption of red meat is associated with the bioavailability of iron, which is known to correlate with the formation of hemoglobin to prevent anemia, especially during pregnancy [27], [28]. Consumption of protein, iron, and nutritional status based on MUAC correlate positively with hemoglobin levels. The same study also showed that the lower the upper arm circumference, the lower the hemoglobin levels[29]. Additionally, other studies have foundthat consumption of red meat correlates with increased gestational weight gain[30].

Although red meat consumption was not very high in the study, it is known that trans fat consumption is quite high.These research findings are in line with previous research in Central Java Province, Indonesia, which also showed that the ratio of fatty acids based on the International Diet Quality Index (DQI-I) method was also imbalanced. This is because respondents consume a lot of food sources high in saturated fatty acids[29].

Furthermore, AHEI-P scores in all CED categories were classified as needs improvement. This result was due to the majority of subjects being classified in the poor dietary quality. Dietary quality is associated with nutrient intakeand improve nutritional status. Nevertheless, there were no significant correlations found between dietary quality and nutritional status. It is always challenging to examine dietary quality, especially of pregnant women, in developing countries. It is also challenging because nutritional status is not merely determined by a single factor, further analysis ofother factors is needed[13], [30], [31]

Nutrient deficiencies in pregnancy remain widespread globally. In low-resource settings, although the burden of theso called 'hidden hunger' during pregnancy remains to be fully revealed, diets are inadequate and micronutrient deficiencies are common. Although adequate food intake remains the preferred means for meeting dietary requirements for micronutrients, some nutrient needs are challenging to meet in pregnancy with diet alone. In response, some countries(across all income levels) fortify selected foods and/or recommend the use of dietary supplements[32]

Additionally, this study only examines the quality diet in the second and third trimester of pregnancy.

While diet quality may change in the first trimester due to nausea or food aversions, research indicates that there is little change indiet quality across trimesters. [33], [34]. These findings could be useful for health practitioners and policymakers in developing strategies to improve the diet quality of pregnant women. However, pregnancy offers a window of opportunity for intervention, because pregnant women may be more willing to adopt healthier dietary habits during thisperiod of life due to perceived benefits to the babies and themselves [34], [35].

V. CONCLUSION

The nutritional adequacy of pregnant women should not be based solely on the quantity of food they consume, butalso on the quality of their diet. Pregnant women should strive to improve the quality of their food intake by consuminga variety of foods and meeting their portion requirements. By increasing both the quantity and quality of their diet, pregnant women can meet their nutritional needs for optimal fetal development and low-risk childbirth.

VI. CONFLICT OF INTEREST

The authors declare no conflict of interest.

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The Relationship of Obesity, Diet and the Incidences of Diabetes Mellitus in studentsat SMK Negeri 4 Semarang

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*Abstract---*Obesity is a condition that occurs due to excessive fat accumulation so that it can interfere withhealth. Excess fat in the body can cause several conditions such as diabetes mellitus, cardiovascular disease, dyslipidemia, hypertension and metabolic syndrome. Obesity in children is not only caused by one factor but manyfactors, including eating high-calorie energy. An unhealthy diet can be a factor in obesity. The aims of the study was identified the relationship between obesity, diet and the risk of type 2 diabetes mellitus that occurs in studentsof SMK Negeri 4 Semarang. This study used a descriptive correlational design and a cross-sectional design conducted at SMK Negeri 4 Semarang in September-November 2021 with a total of 41 respondents from class X-XII who were overweight. This research instrument uses a Semi-Quantitative Food Frequency Questionnaire (SQ-FFQ), 2x24 hour Food Recall and anthropometric measurements (Weight (kg) and Height (cm)). Descriptive and Bivariate data analysis with Pearson Correlation. The results of the measurement of nutritional status based on BMI and metabolic in 41 respondents showed overweight 6 respondents (14.6%), obesity 35 respondents (85.4%), feasting blood glucose (< 200 mg/dl) 40 respondents (97.6%), fasting blood glucose (< 126mg/dl) 40 respondents (97.6%). The nutritional intake of respondents with 24-hour Food Recall showed the average consumption (men aged 16-18 years; men aged 19 years; women aged 16-18 years) as follows: energy 1,366, 2 kcal; 1599,5 kcal; 1,138.6kcal, protein 52.2 g; 45.1 grams; 42.5 g, fat 55 g; 44.9 gr;47.5 gr, KH 173.3 gr; 257.5 g; 140.6 gr. Fulfillment of nutrient intake according to the adequacy category is in the deficit category from energy, protein, fat and KH. The Pearson correlation test showed that there was correlation between obesity and blood glucose (fasting and fasting blood glucose) and there was correlation between carbohydrates with blood glucose (fasting and fasting blood glucose), as evidenced by a p-value of 0.011. The increase in risk factors for diabetes mellitus isnot only influenced by one single factor, namely obesity and diet, there may be other factors that can contribute toan increase in the prevalence of diabetes mellitus in adolescents.

Keywords— Diet; Diabetes mellitus; Obesity; Students

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I. INTRODUCTION

Adolescent obesity prevalence rates vary among 2.3% to 12% in developing countries [1] ((Poobalan & Aucott,2016). Based on the Indonesian Basic Health Research Survey in 2018 reported that the prevalence of obesity and overweight has increased, with more than 1.9 billion adults over the age of 18 being overweight and more than 650 million being obese. The prevalence of obesity that occurs in Indonesia at the age of over 18 years is around 21.8%. Thehighest prevalence occurred in North Sulawesi Province 30.2%, DKI Jakarta 29.8%, East Kalimantan 28.7%, West Papua 26.4%, Riau Islands 26.2%. The data increased in 2007 by 10.5%, 11.5% in 2013 and increased even higher in 2018 by 21.8%. Central Java Province is one of the provinces with obesity prevalence above the national prevalence for adolescents aged 16-18 years. The results of the Central Java Province Riskesdas, obese nutritional status in adolescents aged 13-15 years was 9.5%, consisting of 7.1% overweight and 2.4% obesity. Moreover, obesity among adolescents aged 16-18 years was 7.1%, consisting of 5.4% overweight and 1.7% obesity.

Especially in the habits of adolescent who always consume unhealthy foods such as junk food, fast food and foodsthat are high in calories. Habits that are often done will be a risk for obesity and overweight. In addition to an unhealthydiet, the lack of physical activity carried out by teenagers can also cause slow metabolism in the body [1],[2],[3]. As a result, the less they move, the less calories they burn and the more calories they accumulate in the body, leading to fat storage.

The presence of fast food as one of the food markets in Indonesia affects the diet of teenagers. Fast food markets in Indonesia are the perfect place to relax and also a gathering place for teenagers because the price is affordable, the service is fast, the type of food meets the taste and tends to increase consumer prestige. Teenagers tend to follow fast food consumption without paying attention to the nutritional content and dangers of these foods. The more fast food consumed, the greater the risk of obesity. The increased risk of obesity is due to the excessive fat content in the fast food[4],[5]. The fast food consumption in adolescents with frequent and very frequent categories is associated with an increase in Body Mass Index (BMI)[6], also stated that consuming fast food more than 3 times per week can increase the risk of adolescent obesity.

Adolescents, particularly those in high school, might experience obesity as a result of an improper diet, which increases their chance of acquiring diabetes mellitus early in life. The researcher choose this study location after noticing how obese the students at SMK N 4 Semarang were.The researcher is interested in conducting this study because, in the numerous studies that discuss the risk factors for type 2 diabetes mellitus, no discussion was found regarding the connection between obesity, diet, and the risk of the disease. Based on the explanation provided above, the purpose of this study is to determine whether there is an association between type 2 diabetes mellitus risk, diet, and the prevalenceof obesity among students at SMKN 4 Semarang.

II. METHOD

The design of this research was analytic observational with a cross-sectional approach. This study analyzed the relationship between type 2 diabetes mellitus risk, diet, and the prevalence of obesity among students.

This research was conducted at the SMK N4 Semarang in September-November 2021. The population in this study were students in grades X, XI and XII who were overweight and obese as evidenced by a Body Mass Index (BMI) >24. Sampling in this study used purposive sampling technique. Thus, 41 students who fit the inclusion criteriabecame research respondents. The inclusion criteria of this study were students of SMK Negeri 4 Semarang who had BMI> 24.

Data were collected using (i) dietary assessment such as the Semi-Quantitative Food Frequency Questionnaire (SQ-FFQ) and food Recall 2 x 24 hours. A 24-hour dietary recall is a structured interview designed to gather details about all meals and drinks the respondent has collected in the previous 24 hours, together with their ingredients and quantities. The NUTRITIONIST-4 software was used to measure the energy and macronutrient absorption and adjust it for the Iranian diet. The USDA table of nutritional compounds was also utilized to further examine the nutritional items for obtaining energy and nutrition in light of the incompleteness of the Indonesian table of compounds for the quantity of nutritious items and micronutrients. The respondent typical daily nutritional intake was assessed in accordance with the home modules, and the daily received quantities were then translated to grams. For mixed foods, the nutrition was also determined based on the total nutrition of the food's constituents. In the end, the information was utilized to assess each person's diet quality. (ii) Antropometry measurement, the respondent height was measured to the next centimeter while they were barefoot, and their body weight was determined using a digital scale to the nearest 0.1 kg while they were donning light clothes. Then, body mass index (BMI) was established by calculating the kg/m^2 ratio of weight to height. (iii) Fasting blood glucose and feasting blood glucose using a glucometer. Perifer blood sampling were taken after 12 hours overnight fasting and 2 hours after meal.

Data collection was carried out in the SMK N4 Semarang. The researcher coordinated with head of school in the SMK N4 Semarang regarding the determination of samples. Thus, the researcher explained the aims and objectives of the study to the respondents and asked for approval from the consent form if they were willing to participate in the study. After that, the researcher explained to the respondents how to fill in the dietary assessment and measuring fasting and feasting blood glucose. If the respondents had filled out the questionnaire, the researcher checked the completeness of the respondent's answers.

Data analysis used the Pearson Correlation test with a significance value of 0.05. This research has received approval and research permission from the Ethics Commission of Universitas Kristen Satya Wacana with ethics number No. 112/KOMISIETIK/EC/9/2021.

III. RESULT

Demographic Characteristics

Bases on Table 1, the average of respondent has an obese nutritional status, with a dominating body weight of 60-89 kg. This is shown by the percentage of students who are obese 85.4% and body weight 60-89 kg which is 90.3%. But on the other hand, from the results of checking blood sugar, the average fasting and feasting blood glucose of the respondent are included in the normal category, with a presentation of fasting and feasting blood glucose of 97.6%. In general, the incidence of obesity is often associated with the incidence of metabolic diseases, including diabetes mellitus. However, not all people who are overweight or obese have metabolic diseases such as diabetes mellitus, and vice versa [7]. Diabetes mellitus can occur in all BMI ranges, but can increase more at higher BMI. Thus, although not all people who have a high BMI have diabetes mellitus, they are at higher risk of developing diabetes mellitus.

Dietary Assessment

Table 2 shows the results of the 2 x 24-hour recall obtained the average nutritional adequacy of students in the form of energy, protein, fat, and carbohydrates. The average nutrient consumption of students is included in the severedeficit category. Based on the level of adequacy, the average carbohydrate intake in male students aged 16-18 years is the lowest nutrient intake of 173.3 g, while the recommended carbohydrate intake adequacy is 2,650 kcal per day. Similarly, the average carbohydrate intake of female

students aged 16-18 years was the lowest at 140.6 g, while the recommended carbohydrate intake is 300 g per day. The lowest average intake of nutrients in male students aged 19 years was the average intake of fat and carbohydrates, namely 44.9 g of fat and 257.5 g of carbohydrates, while the recommended intake of fat is 75 g and 430 g of carbohydrates.

From the results of table 3.2, the least frequently consumed type of carbohydrate is cassava, with an average consumption per week of 0.4 times and an average weight of 30.7 g of consumption. The least frequently consumed types of protein are beef liver and crab, with an average consumption per week of 0 times and an average weight of 0g consumption. The least commonly consumed fat type was yogurt, with an average weekly consumption of 0.7 times and an average weight of 47.8g. The least frequently consumed vegetable type was lettuce, with an average weekly consumption of 0.9 times and an average weight of 4.3 g. The least frequently consumed fruit type was duku, with anaverage weekly consumption of 0.1 times and an average consumption weight of 31.7 g. The least frequently consumedbeverage type was syrup, with an average weekly consumption of 0.5 times and an average consumption weight of 13.9 g. Finally, the least frequently consumed snack type was risol, with an average weekly consumption of 0.4 timesand an average consumption weight of 43.9 g.

Table 1. Characteristics of Respondents

Characteristic	n (41)	%
Gender		
Male	29	70,7
Female	12	29,3
Age		
16-17 years	31	75,6
18-19 years	10	24,4
Weight **(kg)**		
< 60	1	2,4
60 – 89	37	90,3
90-100	2	4,9
> 100	1	2,4
Height **(cm)**		
< 160	11	26,8
160 – 170	11	26,8
> 170	19	46,4
Body Mass Index (BMI)		
Overweight **(25-27)**	6	14,6
Obesity (> 27)	35	85,4
Feasting blood glucose test		
< 200	40	97,6
≥ 200	1	2,4
Fasting Blood glucose		
< 126	40	97,6
≥ 126	1	2,4

Tabel 2. Average Consumption of Nutritional Substances Based on Adequacy Category

Total nutritional content for male respondent aged 16 - 18 years (n=28)				
	Energy (kkal)	**Protein (g)**	**Fat (g)**	**Carbohydrat (g)**
Average Consumption	1.366,2	52.2	55	173,3
Adequacy	2.650	75	85	400
% consumption	**51,6%**	**69,6%**	**64,7%**	**43,3%**
Total nutritional content for male respondent aged 19 years (n=1)				
	Energy (kkal)	**Protein (g)**	**Fat (g)**	**Carbohydrat (g)**
Average Consumption	1.599,5	45,1	44,9	257,5
Adequacy	2.650	65	75	430
% consumption	**60,4%**	**69,4%**	**59,9%**	**59,9%**
Total nutritional content for female respondent aged 16 - 18 years (n=12)				
	Energy (kkal)	**Protein (g)**	**Fat (g)**	**Carbohydrat (g)**
Average Consumption	1.138,6	42,5	47,5	140,6

Adequacy	2.100	65	70	300
% consumption	**54,2%**	**65,4%**	**67,9%**	**46,9%**

Noted: ≥ 120% above requirement, 90% - 119% normal, 80% - 89% mild deficit, 70% - 79% moderate deficit, <70% severedeficit

Pearson Analysis Correlation

Based on Table 4, the results of the bivariate analysis of the correlation test show that there was relationship between Body Mass Index and blood glucose (fasting and feasting) with r-value > r-table (0,3008) and for diet, there is no relationship between energy with fasting and feasting blood glucose, as evidenced by a p-value > 0.05. On the other hand, the results of the bivariate analysis of the correlation test also show that there is no relationship between fat with fasting and feasting blood glucose, as evidenced by the p-value> 0.05. However, the results of the bivariate analysis of the correlation test showed that there was an association between carbohydrates with fasting and feasting blood glucose, as evidenced by a p-value <0.05.

Table 3. Frequently Consumed Foodstuffs

Types	Freq/week			(gram)/week		
	Average ± SD	Min	Max	Average ± SD	Min	Max
Carbohydrate						
Rice	21±4,7	14	28	2100±469,6	1400	2800
Bread	4±2	0	7	280±148,5	0	490
Instant noodle	2,3±0,9	1	4	181,5±73,8	80	320
Protein						
Chicken meat	8±2,1	4	14	800±212,1	400	1400
Egg	8,4±3,7	3	15	506,3±224,9	180	900
Tempeh	7±1,1	5	9	525±82,2	375	675
Fat						
Oil	21±2,7	14	28	315±40,7	210	420
Cheese	1,7±1,1	0	3	50,5±31,8	0	90
Margarine	1,8±0,9	0	4	35,6±18,7	0	80
Vegetable						
Spinach	2,6±0,8	1	5	258,5±83,6	100	500
Carrot	2,5±1,3	1	7	302,4±112,9	100	600
Kangkung	3±1,1	1	6	246,3±126,7	100	700
Fruit						
Banana	3,8±2,1	1	8	375,6±205,9	100	800
Manggo	2,6±0,8	0	4	512,2±167,6	0	800
Orange	3,1±1,2	1	6	251,7±92,2	80	480
Drink						
Tea	2,4±1,2	1	6	473,2±239,8	200	1200
Ready to drink	1,8±0,9	0	4	351,2±171,9	0	800
Orange ice	2±1	1	4	409,8±199,8	200	800
Snack						
Cracker	2,5±1,3	1	6	251,2±22,4	20	120
Fried food	2,5±1,1	1	6	49,8±130,6	100	600
Chips	2,4±1,2	0	5	241,5±120,4	0	500

Tabel 4. Pearson Analysis on Factors Significantly Associated between Obesity, diet and blood glucose on therespondent at the SMK N4 Semarang

	Blood Glucose	
	Feasting Blood Glucose r-value	Fasting Blood Glucose r-value
IMT	**0,515**	0,449
significant correlation r value>r table		
Nutrional adequacy	P-value	p-value
Energy	0,965	0,229
Fat	0,295	0,885
Carbohydrat	**0,011**	**0,000**

significant correlation p-value < 0,05, r table; 0,3008

IV. DISCUSSION

In this study, obesity, diet and blood glucose of the respondent at the SMKN N4 Semarang were

examined. The 41 respondents s involved were predominantly female compared to men and the majority were in the age range of 16-17 years. BMI showed that 85,4% (35 respondent) was obesity. In general, the incidence of obesity is often associated with the incidence of metabolic diseases, including diabetes mellitus. However not all people who are overweight or obese have metabolic diseases such as diabetes mellitus, and vice versa [8]. Diabetes mellitus can occur in all BMI ranges, but can increase more at higher BMI. Thus, although not all people who have a high BMI have diabetes mellitus, they are at higher risk of developing diabetes mellitus [9].

Adolescent obesity is a lifelong condition that persists well into adulthood. Therefore, it is vital to interact with elements that are modifiable. Behavior-related variables are those that can be altered. Consuming fruits and vegetables is excellent for a teen's health [10]. Those foods can be utilized as an alternative to harmful foods including high-sugar, fast-food, fatty, and other risky meals [11]. Adolescent eating patterns now tend to be unbalanced, irregular, and prefer to consume fast food and junk food which greatly impacts adolescents' food choices to become unhealthy. Adolescent tend to be more interested in consuming food outside the home which contains high saturated fat, and is low in fiber, vitamins and minerals [12], [13].

These eating habits then have an impact on the quality of eating of adolescents, giving rise to periodic weight gain which eventually leads to the incidence of obesity in adolescents [14]. This also affects the occurrence of obesity in students at SMK Negeri 4 Semarang, unhealthy eating choices cause students' eating patterns to become unbalanced and irregular, which in turn causes obesity. On the other hand, another impact is the lack of consumption of nutrients, so that the nutrients that enter the body are not sufficient for normal needs [14].

The results of the bivariate analysis of the correlation test show that there was relationship between obesity and blood glucose (fasting and feasting) with R-values > r-table (0,3008). The present study showed that weight gain was significantly associated with a higher incidence of type 2 diabetes. this is in line with research (Kim et al., 2018) there was a tendency for weight growth to lead to the onset of diabetes; respondents who were "becoming obese" or "still obese" had a higher risk of incident diabetes than those who were "still non-obese.". The study also showed that there was a relationship between carbohydrates and fasting and feasting blood glucose (p-value <0.05). Carbohydrates are a backup energy source that is identical to the glycemic index. Carbohydrate intake will be digested in the body and will be broken down into glucose in the body, then absorbed by the digestive tract and into the bloodstream. Excess carbohydrate intake will be stored in the muscles and liver in the form of glycogen. If a person consumes carbohydrates beyond the adequacy limit, then the unused glycogen will be converted into fat, causing excess weight. In addition, fat accumulation will trigger inflammation which results in increased blood glucose levels [13]

V. CONCLUSIONS

The average nutritional status of students at SMKN 1 Semarang is obesity, and the average fasting and feasting blood glucose of respondent are included in the normal category. The average student nutrient consumption is included in the category of severe deficit. The average consumption of nutrients for students aged 16-19 years is included in the category of severe deficit. The frequency of food ingredients that are often consumed based on nutrients are rice, chicken eggs, cooking oil, spinach, bananas, sweet tea, and cracker. The results of the correlation test stated that there was correlation between obesity and blood glucose and there is a relationship between carbohydrates and fasting and feasting blood glucose, as evidenced by the p-value of 0.011.

CONFLICT OF INTEREST DISCLOSURE

The authors declare that they have no competing interests.

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Methods and Outcomes of Palliative Carefor Geriatric Patients: A Scoping Review

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Abstract---Palliative care (PC) is any type of care that focuses on reducing symptoms and maintainingand increasing quality of life for patients and their families. Geriatric patients were more likely to receive palliative care and had unique needs compared to the general population. To improve the quality of palliative care, especially for geriatric patients, we need a better understanding of methods and outcomes for geriatric patients when delivering palliative care. The purpose of this review was to identify the methods and outcomes ofpalliative care in geriatric patients. This scoping review was guided by the Systematic Reviews and Meta- Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist and used framework proposed by Arksey and'O malley. Several databases, such as EBSCO, PubMed, and Scopus, were used to search the articles with a publication range of 2013–2023. Thematic analysis was used to identify and summarize palliative care in this review. Thirty-six studies were included in this review, and there were many types of methods for delivering palliative care for geriatric patients. In clinical settings, palliative care is delivered with any form of care, suchas mindfulness-based intervention, music therapy with body tambura, the Care Programme for the Last Days ofLife (CAREFUL), meaning-making dignity therapy, older medicare, palliative management, supportive therapy for oedema, spiritual care, palliative radiotherapy, short-term life review intervention, geriatric interventions, and mindfulness-based art therapy (MBAT) intervention. In community settings, palliative care can be deliveredin any form, such as feedback strategies intervention, abdominal massage, caregiver-guided pain coping skills training intervention, pain management with analgesic and non-pharmacological methods, working with nursing home palliative care teams, an advance care planning toolkit for case managers, knowledge-based palliative care intervention, short-term integrated palliative and supportive care (SIPS), pharmacological pain management, telehealth palliative care, and animal-assisted intervention. Outcomes of palliative care in geriatric patients in both the clinical and community setting were pain relief, reducing depressive symptoms andanxiety, increasing spiritual well-being, increasing quality of life and well-being, being comfortable, reducing oedema and constipation, reductions in the odds of in-hospital death, patient readiness, place of death, sleep quality, and quality of dying. Geriatric patients had a variety of methods and outcomes in palliative care. This study suggests that outcomes should be evaluated continuously after implementing methods for delivering palliative care to geriatric patients

Keywords-- Aged; Methods; Outcomes; Palliative Care

I. INTRODUCTION

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Palliative care is a specialized medical care approach that focuses on the relief of pain and other symptoms of alife-limiting illness. According to World Health Organization, an estimated 56.8 million people need palliative care annually, including 25.7 million people who are in their last year of life [1]. The need for palliative care is growing, particularly for the elderly population. Although palliative care is recommended by many healthcare professionals, especially for geriatric patients, there is still a significant gap in knowledge of its effectiveness among many medical practitioners. Palliative care research has focused primarily on specific groups or settings, or on specific interventions within palliative care. There has not been enough research that investigates the different strategies or methods of palliative care for geriatric patients.

There is a gap in the literature regarding the analysis of the available evidence on the different strategies or methods of palliative care for geriatric patients. More specifically, there is a need for a systematic scoping review thatexamines the various methods and outcomes of palliative care for geriatric patients. This scoping review aims to address this gap in knowledge and provide a comprehensive understanding of the available literature on the subject.

the primary objective of this scoping review is to provide a comprehensive understanding of the different methods and strategies utilized by healthcare professionals in providing palliative care to geriatric patients and the outcomes associated with these methods. The review aims to identify and map out gaps in the literature, highlighting areas that require further research. It also aims to identify best practices and effective strategies that can be implemented by healthcare practitioners and policymakers in ensuring the provision of effective palliative care services for geriatric patients. Overall, the findings of this systematic scoping review will contribute to the development of a more comprehensive and evidence-based approach towards the provision of palliative care services for geriatric patients.

II. METHOD

Study design

We employed the scoping review methodological framework developed by Arksey and O'Malley. This framework allows for the inclusion of an extensive range of study designs to build a comprehensive outline of the research field. Following the Preferred Reporting Item for Systematic Review and Meta-analysis for Scoping Review(PRISMA-ScR), our scoping review methodology is suitable for this subject because it permits a thorough evaluationof the palliative care interventions available to geriatric patients. The scoping review method began with a broad research question, which was narrowed during the study process to enable in-depth evaluations of the efficacy of palliative care interventions. Our initial study question that guided the literature search was "what are the most effective palliative care interventions for geriatric patients, and what outcomes do they produce?". The comprehensive scopingreview undertaken in this study provided a broad range of findings on the methods and outcomes of palliative care forgeriatric patients.

Criteria Eligibility

We used a comprehensive set of criteria to determine the eligibility of articles for inclusion in our study. Based on the PCC (Population, Concept. Context) framework, the eligibility criteria for this study included patients with geriatric palliative care needs, Concept and content that focused on palliative care, and studies that reported outcome measures related to palliative care delivery or efficacy. Additionally, we only considered articles that had been accepted for publication or those already published in peer-reviewed journals. Preprints were excluded from theselection process. We did not apply

any language, location, or time restrictions to the search criteria. We also considered all forms of publications, including viewpoints, original research articles, reviews, and opinions. This comprehensive set of eligibility criteria allowed us to include a wide range of studies in our scoping review, giving us a comprehensive understanding of the methods and outcomes of palliative care for geriatric patients.

Search strategy and study selection

A scoping review search was conducted on multiple databases, including PubMed and the Cochrane CentralDatabase. The search strategy utilized a combination of Medical Subject Headings (MeSH) and keywords relevant to the palliative care interventions available to geriatric patients. Two independent investigators conducted the database search from the beginning to February 2023. The search employed the "related articles" feature and hand-searched the reference lists of the included articles to expand the search and identify additional studies. The following keywords and MeSH terms were used to ensure a comprehensive search: (("Aged" OR "Elderly" OR "Older Adult" OR "Elder"OR "Geriatric" OR "Elderly People" OR "Old People" OR "Senior") AND ("Palliative Care" OR "End of Life Care" OR "Hospice Care" OR "Palliative Treatment" OR "Palliative Treatments" OR "Palliative Therapy" OR "Palliative Supportive Care" OR "Palliative Surgery" OR "Terminal Care") AND ("Palliative Care" OR "End of Life Care" OR"Hospice Care" OR "Palliative Treatment" OR "Palliative Treatments" OR "Palliative Therapy" OR "Palliative Supportive Care" OR "Palliative Surgery" OR "Terminal Care")). We removed duplicate results using a reference tool and manually screened the remaining articles after the initial search. The inclusion criteria for this review were studies that focused on interventions to improve palliative care outcomes for geriatric patients. The exclusion criteria included studies on palliative care for non-geriatric populations or those with incomplete or missing data.

Data extraction and analysis

Three authors were involved in the data extraction process. In case of any discrepancies, consensus was reachedby the group. The data extraction process was conducted using the Preferred Reporting Items for Systematic Reviewsand Meta-Analyses (PRISMA) protocol, which included identifying duplicates, screening titles and abstracts, and obtaining full texts of relevant studies. The tabulation method was used to manually extract data from the study results,and the data of interest included the author, study location, study design, setting, intervention care model, and its effectiveness. Afterward, we performed a qualitative thematic analysis of the data extracted from the included studies.Through this process, we aimed to provide a comprehensive overview of the current landscape of palliative care interventions available for geriatric patients.

III. RESULT

Selection process

We selected a total of twenty-one studies for analysiis. Our study selection process involved an initial search of 19,988 articles from three databases. After removing duplicates, we were left with 766 articles. These articles were then assessed for eligibility, resulting in 41 studies for further consideration. Of the 41 studies, 20 were excluded duringthe screening process, and the remaining 21 studies were selected for analysis. The PRISMA flow diagram provides avisual representation of our study selection process (see Figure 1).

Characteristic of included studies

The characteristics of the 21 studies included for analysis were diverse (see table 2). The study design of theselected studies varied, with nine being randomized controlled trials, one quasi-experimental,

one experimental, five pilot studies, one feasibility study, two cohort studies, one observational study, and one survey. The patients included in the studies were suffering from a range of diseases and conditions, such as metastatic non-small cell lung cancer (NSCLC), advanced cancer, colorectal cancer, unsectable advanced gastric cancer, breast cancer, pancreatic adenocarcinoma, dementia, acute gastric problems, and Chronic Obstructive Pulmonary Disease (COPD). The studies were conducted in both clinical and community settings. The modality of intervention applied in the selected studies covered
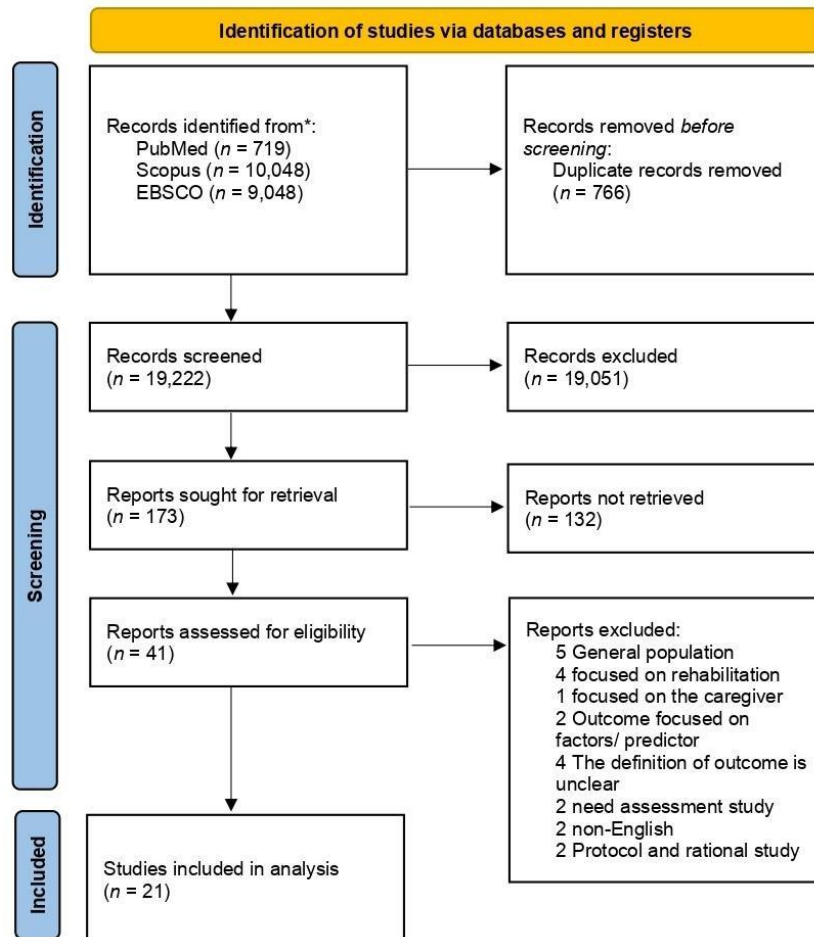
various aspects, including physical, psychological, spiritual, quality of life (QoL), and quality of care. The diversity in study characteristics might be considered in the analysis to provide comprehensive insight into the effectiveness of interventions across a range of contexts and conditions.

Figure 1. PRISMA flow diagram

Table 1. Themes, ordinate, sub-ordinate themes, and modality intervention

Setting	Ordinate	Subordinate	Modality intervention
Clinical	Physic	Cancer-related symptom	Web-based collaborative care intervention
		Homeostasis	Palliative radiotherapy for gastric bleeding
		Sleep problem	Resistance exercise
		Nutrition problem	Nutritional support
		Medication	Adjuvant or first-line palliative
			Chemotherapy
	Phycology	Anxiety	Spiritual care using spiritual pain assessment sheet
			Animal-Assisted Intervention
			Spiritual care
		Depression	CBM
			Animal-Assisted Intervention
			Spiritual care
		Coping	Spiritual care
	Spiritual		CBM
			Spiritual care
	Quality of life	All domain	Spiritual care using spiritual pain assessment sheet
	Quality of care		The Care Programme for the Last Days of Life (CAREFuL)
Community	Physic	Dementia-related symptom	Symptom management
		Constipation	Abdominal massage
		Body comfort	Music therapy with body tambura
	Psychology	Depression	Facilitated family case conferencing
		Satisfaction	Tele-assisted palliative home care
		Readiness	Advanced care planning (APC) toolkit
			Short-term integrated palliative and supportive care (SIPS)
	Quality of Life	All domain	Education palliative care intervention
	Quality of care		The generic and the patient-specific feedback strategy
			The Care Programme for the Last Days of Life

IV. DISCUSSION

Modality intervention in palliative care

The modality of intervention for palliative care in the clinical and community settings covered various aspects of physical, psychological, spiritual, quality of life, and quality of care regarding EOLC (see Table 1). In the clinical setting, the modality of intervention for the physical domain web-based collaborative care intervention, palliative radiotherapy for gastric bleeding, resistance exercise, nutrition support, adjuvant or first-line palliative, and chemotherapy. The modality of intervention for the spiritual domain included the use of the spiritual pain assessmentsheet, animal-assisted intervention, spiritual care, and CBM. The modality for improving quality of life included the use of the spiritual pain assessment sheet. The modality of intervention for improving the quality of care was The Care Programme for the Last Days of Life (CAREFuL). In the community setting, the modality of intervention for the physical domain included symptom management, abdominal massage, and music therapy with body tambura. The

modality of intervention for psychological support included facilitated family case conferencing, tele-assisted palliative home care, advanced care planning (APC) toolkit, and short-term integrated palliative and supportive care (SIPS). The modality for improving quality of life included education palliative care intervention. Finally, The genericand the patient-specific feedback strategy and The Care Programme for the Last Days of Life were the modalities of intervention utilized for improving the quality of care regarding EOLC.

Modality outcome

From the available intervention modalities in both hospital and community settings, only a few modalities have shown statistically significant better outcomes. In a clinical setting, resistance exercise improves sleep quality, nutritional support enhances nutritional status, spiritual care reduces anxiety, depression, and spiritual distress while improving coping skills. Additionally, The Care Programme for the Last Days of Life (CAREFuL) enhances the qualityof care for patients with end-of-life. Furthermore, definitive therapy such palliative radiotherapy for gastric bleeding increases hemoglobin levels, and chemotherapy improves survival rates. In a community setting, symptom management reduces pain and pressure ulcers, facilitated family case conferencing improves medication, and patient feedback enhances satisfaction with palliative care. Among all the modalities found in both clinical and community settings, none of them show an improvement in QoL as the primary outcome of palliative care. However, modalities that demonstrate positive results can be integrated into a holistic and continuum palliative care approach to enhance QoL.

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Table 2. characteristic of included studies

Study	Design	Location	Population	Setting	Modality	Outcome
[2]	RCT	USA	Patients with Metastatic Non-SmallCell Lung Cancer	Clinical	a couple-based meditation (CBM)	Depressive symptom,Cancer-Related StressSymptoms, spiritual well being
[3]	RCT	Netherland	Patients with dementia	Community	the generic and thepatient-specific feedback strategy	comfort and quality of care in the dying phase
[4]	RCT	Belgium	Elderly with acutegastric problem	Clinical	the Care Programmefor the Last Days of Life (CAREFuL)	comfort and quality of care in the dying phase
[5]	A pilot study	Warsaw	Palliative Patients with constipation	Community	Abdominal message	Constipation
[6]	A Qualitative pilot study	Germany	Elderly with advancecancer	Community	Music therapy withbody tembura	experience with the intervention
[7]	A pilot study	USA	N/A	Community	Advance care planning (APC) toolkit	clients readness
[8]	A pilot study	Swedeen	N/A	Community	Education palliative care intervention	QoL
[9]	Observational study	UK	N/A	Community	short-term integrated palliative and supportive care (SIPS)	A feasibility evaluation
[10]	A pilot non-randomized controlled trial	Japan	Patients with advancecancer	Clinical	Spiritual care usingspiritual pain assessment sheet	Functional Assessmentof Chronic Illness Therapy-Spiritual (FACIT-Sp). and Hospital Anxiety and Depression Scale (HADS)
[11]	Cohort	Japan	Unsectable advance gastric cancer	Clinical	Palliatif radiotheraphy for gastric bleeding	hemostasis outcome
[12]	RCT	Denmark	older patients withcolorectal cancer		adjuvant or first-linepalliative	Chemotherapy completion without dose
[13]	Experimental study	Italy	N/A	Clinical	Animal-Assisted Intervention	Anxiety and depression
[14]	RCT	USA	Advance dimentia	Community	facilitated family case conferencing	EOLD and QUALID
[15]	RCT	Germany	Brest cancer with sleep problem	Clinical	resistance excercise	Sleep characteristic
[16]	Retrospective Cohort	Switzerland	Patient with advancedpancreatic adenocarcinoma	Clinical	Chemotherapy	Performance status, dosage reduction, andresidual survival after disease progression
[17]	Survey	China	Patient with cancer	Clinical	Nutrisional support	Inflmation status
[18]	Cross-sectional study	Italy	Patient with cronicillness	Clinical	Spiritual care	Anxiety, depression,coping strategy, anddaily spiritual experience
[19]	RCT	France	Elderly with dimentia	Community	Symptom management	Symptom management outcome
[20]	RCT	Belgium	N/A	Clinical	the Care Programmefor the Last Days of Life	
[21]	Feasibility study	Italy	Patient with COPD	Community	Tele-assited palliatice home care	patient statifaction
[22]	RCT	USA	Patient with advancecancer	Clinical	Web-based collaborative care intervention	Depression, pain,fattigue, and QoL

Behavior Mother's Towards Nutritional Status Of Children At The Community Health Center

Agung Suharto[1], Teta Puji Rahayu[1], Astuti Setiyani[1*]

Abstract--- *Toddler nutritional status is an indicator of toddler growth. Basic Health Research Data, 2021: 5.4% malnutrition status and 13.0% malnutrition. In 2021 the proportion of malnutrition status was 5.7% and malnutrition was 13.9%, from the target of 19.6% and in 2018 the proportion of malnutrition was 3.9% and malnutrition was 13.8% of the target of 17.7%. The purpose of this study was to determine the effect of maternal knowledge and attitudes on the nutritional status of children under five. The design was cross sectional study design. Population 135 and a sample of 94 people. sampling technique: simple random sampling. Independent variable: knowledge and attitudes of the mother, while the dependent variable: nutritional status of children. Data collection techniques: questionnaires and baby scales. To analyze the effect, using multiple logistic regression with a significance of 0.05. The results showed knowledge of mother group affected 3.2% with poor nutritional status and 34% affected good nutritional status. Mother's attitude affects 1.1% of children under five with poor nutritional status and affects 16% of children with good nutritional status. From the results of the analysis using multiple logistic regression with results 0.000 (<0.05). Conclusions: there is an influence of knowledge and attitudes of mothers of children under five on the nutritional status of children under five. Suggestion: to reduce malnutrition and malnutrition in Indonesia is to increase the knowledge and attitudes of under-five mothers in providing menus according to the needs and age of the children.*

Keywords-- *Knowledge, Attitudes, Nutritional Status*

I. INTRODUCTION

Nutritional status is a condition caused by a balance between intake of nutrients from food and the need for nutrients needed for the body's metabolism. Nutritional status is an expression of a state of balance in the form of certain variables, or the embodiment of nutrition in the form of certain variables [1]. Nutritional status is defined as the state of health of a person or group of people resulting from the consumption, absorption and use of food nutrients. Anthropometric measurements are measurements of the size, weight and proportions of the human body with the aim of assessing nutritional status and energy availability in the body and detecting nutritional problems in a person [2]. Anthropometric measurements that can be used to determine nutritional status in the elderly include height, weight, knee height, calf circumference, skinfold thickness (skinfold measurement), and upper arm circumference [3].

Based on Basic Health Research in Indonesia in 2018, data obtained for the proportion of malnutrition status was 5.4% and malnutrition was 13.0%, in 2013 the proportion of malnutrition was 5.7% and malnutrition was 13.9%, from the target of 19, 6% and in 2018 the proportion of malnutrition is 3.9% and malnutrition is 13.8% of the target of 17.7% [4]. The 2019 RPJMN target is 17%. Prevalence of children under five in East Java Province in 2012 under five with malnutrition status was 2.35% and malnutrition was 10.28%. In 2021 there was an increase in the number of toddlers with malnutrition status of 2.3% and malnutrition of 12.6% [5]. Data from the Magetan District Health Office for 2021, the number of under-fives with malnutrition is 1.1% [6].

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There are two factors that affect nutritional status, namely indirect factors and direct factors. Indirect factors include 1) food security which includes; education, knowledge, food availability, purchasing power, 2) parenting style which includes; mother's attitude in providing a balanced menu, behavior and 3) health services. The direct factors are nutritional intake and infectious diseases. Both of these factors greatly affect a person's nutritional status. Malnutrition in children has an acute and chronic impact on growth and development. Malnourished children will appear physically weak. Children who are malnourished will be more susceptible to disease because their immune system is not good [7].

One of the government's efforts to improve malnutrition in toddlers is to create a program, namely the 4 healthy 5 perfect menu pattern, balanced nutrition guidelines, nutrition awareness families (Kadarzi), Posyandu as a means of community participation in efforts to improve health, and Nutrition Recovery Post. Counseling to caregivers/mothers of toddlers regarding toddler nutrition, balanced menus according to age and if necessary referrals to adequate health facilities [1].

II. METHOD

Analytical research method with cross sectional research design. Population 135 and sample 94 people. sampling technique: simple random sampling [8]. Independent variable: mother's knowledge and attitude, while dependent variable: nutritional status of toddlers. Data collection techniques: questionnaires and baby scales [9]. To analyze the influence using multiple logistic regression with a significance of 0.05 [10].

III. RESULT

Characteristics of toddler mothers based on age

From the research results obtained data on the age of the mother under five. The highest frequency is aged 31-35 years, as much as 27.64%. Age distribution can be seen in Figure 1.
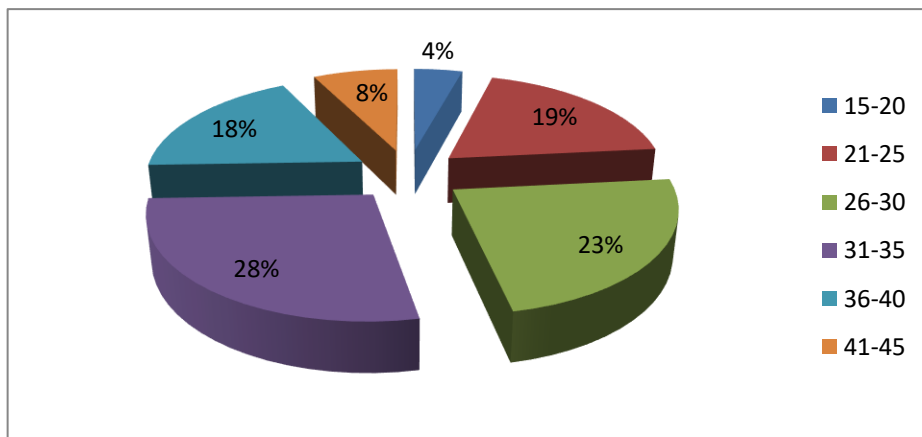

Figure 1
Age distribution of mothers under five at the Panekan Health Center, Magetan Regency, 2021

Characteristics of mothers under five based on work

From the results of the study, it was found that most of the work data of mothers under five were 82 housewives, and at least 1 person as farm labourers. The distribution of work for toddler mothers can be seen in Figure 2.
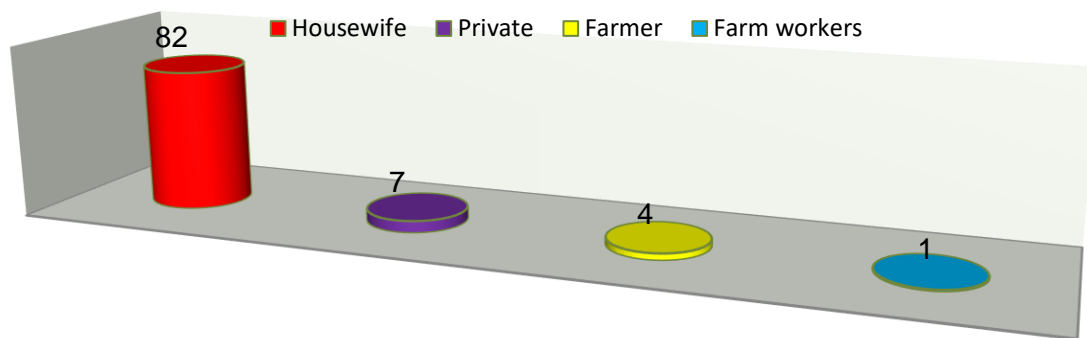
Figure 2

Distribution of work for mothers of toddlers at the Panekan Health Center, Magetan Regency 2021.

Mean, Standard Deviation, Minimum, Maximum Knowledge and Attitude Variables

From the results of data collection, the lowest score for mother's knowledge was 7 and the highest score was 12. Mother's attitude in providing toddler nutrition had the lowest score 20 and the highest score 37. The distribution of independent variables can be seen in table 1.

Table 1

Mean, Standard Deviation, Minimum, and Maximum Knowledge and Attitude

No	Variables	Mean	Standard Deviation	Minimum	Maximum
1	Knowledge	10,3	1,437	7	12
2	Attitude	30,3	4,055	20	37

Frequency Distribution of Toddler Nutritional Status

From the results of the study, the nutritional status of toddlers at the Panekan Health Center in Magetan Regency in 2021 showed that there were 4 children with more nutritional status, and 73 children with good nutritional status. The distribution of the nutritional status of toddlers can be seen in table 2

Table 2

Distribution of the frequency of nutritional status of toddlers at the Panekan Health Center, Magetan Regency in 2021

No	Nutritional status	Frequency	Percentage (%)
1	More	4	4,3
2	Good	73	77,7
3	Not enough	12	12,8
4	Bad	5	5,3
	Total	**94**	**100**

Statistical analysis of the effect of knowledge, mother's attitude on the nutritional status of toddlers

The effect of the knowledge and attitudes of mothers under five on the nutritional status of toddlers was obtained by the results of the study by testing the multiple logistic regression multiple log linear model p value 0.000 (p<0.05) so that Ho was rejected, H1 was accepted. This means: there is an influence of knowledge and attitudes of toddler mothers on the nutritional status of toddlers at the Panekan health center, Magetan Regency. In detail the results of the analysis are in table 3

Table 3

Statistical Analysis of the influence of knowledge and attitudes of mothers under five on the nutritional status of toddlers at the Panekan Health Center, Magetan Regency, 2021.

No	Influence between variables	Significant	Information
1	Knowledge of nutritional status	0,000 (p<0.05)	There is influence
2	Attitudes of nutritional status	0,000 (p<0.05)	There is influence

IV. DISCUSSION

The highest proportion of mothers aged 31-35 years was 27.65%. According to Hurlock, adulthood is divided into 3; namely early adulthood (18-40) years, middle adulthood (40-60) years, late adulthood (60-120) years. Biologically, it is the peak period of prime physical growth and that age of the human population as a whole because it is supported by healthy lifestyle habits. Psychologically, there are quite a lot of people who are unable to reach maturity due to the many problems they face and are not able to overcome either before or after marriage [11].

Most of the mother's work as housewives (82 people). Work is a symbol of one's status in society. Work does not mean narrowly only to get rewards, but also as a duty or responsibility of a person in living life according to the status, position and degree that he has. The work environment can make a person gain experience and knowledge, either directly or indirectly. From the results of research on the mother's education most secondary education as much as 53%. Education means guidance that has been given by one person to another in order to understand something. It cannot be denied that the higher a person's education, the easier it is for them to receive information, and in the end the more knowledge they will have. Conversely, if someone has a low level of education it will hinder the development of that person's attitude towards receiving information and newly introduced values [12].

Based on the research results, the average value of mother's knowledge was 10.31. Mother's knowledge about proper and correct nutrition for toddlers affects the nutritional status of toddlers. Knowledge of nutrition includes good eating habits, selection and use of food, which in turn affects the quality of food for toddlers. Knowledge of good nutrition is balanced nutrition, meaning that the intake of nutrients must be in accordance with the body's needs. Because it has an impact on brain growth and the level of intelligence of toddlers [13]. This is in accordance with the journals, Effects of education level, income level, mother's knowledge, mother's attitude and mother's behavior on the nutritional status of toddlers in Kesamben District, Jombang Regency. Mothers who have below average knowledge, have toddlers whose nutritional status is less is 28.3%. Mothers who have above average knowledge have toddlers with good nutritional status 34% [14]

From the description above, it can be concluded that the nutritional status of toddlers is very dependent on the level of mother's knowledge about toddler nutrition. The better the mother's knowledge about toddler nutrition, the healthier and smarter our toddlers will be in their growth and development. From the results of the research, there were 15 mothers with 31 attitudes, all of them (100%) had good nutritional status. Attitude is a reaction or response that is still closed from someone to a stimulus. Attitude includes 3 components, namely cognitive, affective and psychomotor [15]. There are 4 levels of attitude; namely receiving the subject and paying attention to the stimulus, responding in the sense of doing and completing the task given, respecting and inviting others to solve problems, and being responsible for everything chosen with all the risks. A good mother's attitude in providing a balanced menu to toddlers affects their nutritional status. This is in accordance with the journal The relationship between knowledge and nutritional attitudes of mothers with the nutritional status of toddlers in the working area of the Rajabasa Indah Health Center, Rajabasa Raya sub-district, Bandar Lampung with the results of 77 respondents who behaved well, 33 of them had under-fives with undernourished status. 44 other respondents have good nutritional status under five. Of the 82 respondents who behaved less, 67 of them had toddlers with undernourished status, while 15 other people had toddlers with good nutritional status. Mother's attitude is formed from habits and upbringing in the family as well as information obtained, both formal and informal. So the environment and place of residence affect the mother's attitude in giving her toddler menu [16].

There were 33 mothers' knowledge about toddler nutrition who scored 11, there were 32 or 97% of toddlers with good nutritional status. Knowledge of mothers who got a score of 7 as many as 4 people, there were 3 or 75% with poor nutritional status. Mother's knowledge about toddler nutrition greatly supports the nutritional status of toddlers because mothers are the first and main person who cares for toddlers. The nutritional needs of toddlers can be met if the mother knows and is able to provide a balanced menu according to the age and needs of the toddler [17].

Mother's attitude in providing menus to toddlers who scored 31 as many as 15 of them (100%) had good nutritional status. The attitude of the mother who got a score of 20 was 4 people, there were 3 or 75% of children under five who were undernourished. A positive mother's attitude in providing toddler menus gives optimal results [18]. Toddlers in the category of good nutritional status because they get care from mothers with good attitudes too. Mothers know how to choose, process and serve healthy and age-appropriate toddler food. From the description above, it can be concluded that the mother's knowledge and attitude in providing toddler menus affects the level of nutritional status. So one of the solutions to reduce the number of undernourished toddlers is by increasing the knowledge and attitudes of mothers in providing toddler menus [19].

V. CONCLUSION

Mother's age was highest in the age group 31-35 years 27.65%, Mother's occupation as a housewife was 87%, Mother's education was mostly in secondary education 53%. Most toddlers with good nutritional status are 97%. There is an influence of the knowledge and attitudes of the mother of the toddler on the nutritional status of the toddler.

Suggestion, mothers of toddlers need to increase their knowledge and understanding of toddler nutrition according to age, so that their nutritional status is in the good category. For health institutions. As input to the manager of the nutrition and health promotion program in an effort to improve the recovery of malnutrition and undernutrition in the working area of the Panekan Health Center, Magetan Regency.

CONFLICT OF INTEREST
No conflicts of interest have been declared

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Management Of Diabetic Ulcuses Treatment : A Literature Review

Dadi Santoso[1*], Rajesh Khumar Muniandy[2]

*Abstract--- Impaired healing in diabetes is the result of a complex pathophysiology involving vascular, neuropathic, immunological and biochemical components. The vascular changes seen in diabetics also lead to reduced migration of leukocytes into the wound, making it more susceptible to infection. Diabetic foot ulcers are a serious complication of diabetes which results in significant morbidity and mortality. Standard practices in management include surgical debridement, dressings to facilitate wound moisture and exudate control, wound dressing, vascular assessment, and glycemic and infection control. These practices are best coordinated by a multidisciplinary diabetic foot wound clinic. Even with this comprehensive approach, there is room for improvement in results. **Methods ;** Literature review, following database: Google search, NCBI, researchgate, PubMed, between 2010- 2022. Qualitative assessment was applied using Giacomini and Cook's criteria. **Results ;** The results of this study found that Management of ulcer wound care is very important which includes debridement, offloading, keeping the wound moist, edema control, and infection control as well as education about foot care needs to be taught to patients and their families.**Conclusions ;** Management of ulcer wound care is very important which includes debridement, offloading, keeping the wound moist, edema control, and infection control as well as education about foot care needs to be taught to patients and their families, multidisciplinary diabetic foot care is now a mainstay therapy and prevention by reducing high pressure on the wound.*

Keywords-- Inflammation, Wound Healing, Management, treatment, ulcers

I. INTRODUCTION

Diabetes mellitus (DM), DM is a heterogeneous metabolic disorder characterized by dysfunctional hyperglycemia, insulin secretion, insufficient insulin action, or both . Diabetes mellitus (DM) is defined as a group of metabolic pathologies characterized by impaired insulin production and/or function, leading to hyperglycemia. Hyperglycemia is blood glucose greater than 125 mg/dL during fasting and more than 180 mg/dL 2 hours postprandial.

Hyperglycemia correlates with vascular stiffness leading to slower blood flow and microvascular dysfunction, resulting in decreased tissue oxidation.. Hyperglycemia due to lack of insulin or resistance to its metabolic effects causes peripheral neuropathy, which can lead to long DM healing.

Impaired healing in diabetes is the result of a complex pathophysiology involving vascular, neuropathic, immunological and biochemical components. The vascular changes seen in diabetics also lead to reduced migration of leukocytes into the wound, making it more susceptible to infection. These vascular changes lead to peripheral neuropathy, foot deformities, often minor foot trauma, and peripheral arterial disease can lead to diabetic foot ulcers (UKD).

Diabetic foot ulcers, The incidence of diabetic foot ulcers worldwide is between 9.1 to 26.1 million, Approximately 15 to 25% of patients with diabetes mellitus]. As the number of newly diagnosed diabetics increases each year, the incidence of diabetic foot ulcers will also increase[8]. Diabetic foot ulcers can occur at any age but most often occur in patients with diabetes mellitus aged 45 years and over. Diabetic foot ulcers are one of the most common complications of patients who have poorly controlled diabetes mellitus. Diabetic foot ulcers are one of the most common and serious complications of diabetes mellitus, because wound healing is impaired in diabetic feet. Most often, it is precipitated by hyperglycemia, chronic inflammation, micro- and macro-circulatory dysfunction, hypoxia, autonomic and sensory neuropathy, and neuropathic signaling disorders.

Circulatory dysfunction, both at the microvascular and macrovascular levels, is a major factor in delaying or hindering wound healing in diabetes. Several factors can affect wound healing; is an underlying disease process, such as anemia,

cardiovascular disease, diabetes, rheumatoid arthritis or autoimmune disease, cancer, infection, age, nutrition, maldiet, obesity, lifestyle, tobacco use, alcohol intake, medication; steroids, NSAids, chemotherapy, pain, psychological, environmental and social support and previous treatment. In this study focused on integrated ulcer wound care management.

II. METHOD

Literature review, following database: Google search, NCBI, researchgate, PubMed, between 2010- 2022. Qualitative assessment was applied using Giacomini and Cook's criteria.

LEG ULCER

Definition.

Diabetic foot ulcers are one of the most common complications of patients who have poorly controlled diabetes mellitus. The disease is usually chronic and wound healing is impaired. These ulcers are usually in areas of the foot that experience repeated trauma and pressure sensations.

Reason

The causes of diabetic foot ulcers are many factors. Underlying factors are persistent hyperglycemia, pressure on the feet, foot deformities, improper foot care, ill-fitting footwear, underlying peripheral neuropathy and poor circulation, dry skin.. Staphylococcus is the most common organism that causes foot ulcers. Other opinions as a cause of foot ulcers are a history of previous amputation, insulin consumption, gender, distal neuropathy, and foot deformities.

About 60% of people with diabetes develop neuropathy, which eventually leads to foot ulcers[7]and the risk of foot ulcers increases in individuals with feet having disproportionate pressure on the feet. Foot ulcers are triggered by hyperglycemia, chronic inflammation, micro- and macro-circulatory dysfunction, hypoxia, autonomic and sensory neuropathy, and disturbances of neuropeptide signaling.

Foot Ulcer Pathophysiology

Pathophysiology, diabetic foot ulcers and soft tissue infections caused by concomitant neuropathy, trauma, and, in many patients, peripheral arterial occlusive disease[. Furthermore diabetic neuropathy causes foot deformity, which causes increased skin pressure causing foot ulcers[39]. The relationship between wound healing and the nervous system is seen clinically because peripheral neuropathy is reported in 30-50% of diabetic patients and is a predictor of foot ulceration. Foot ulcers are triggered by hyperglycemia, chronic inflammation, micro- and macro-circulatory dysfunction, hypoxia, autonomic and sensory neuropathy, and disturbances of neuropeptide signaling.. Peripheral arterial disease in DM can lead to diabetic foot ulcers (DFU), which trigger a hyperglycemic emergency..

Complications

The most feared complication is limb amputation, other complications include foot gangrene, osteomyelitis, permanent deformity and risk of sepsis. Patients who end up with an amputation will need comprehensive therapy including physical therapy, occupational therapy and also need a prosthesis.

WOUND HEALING PROCESS

Wound healing is a dynamic and complex biological process that can be divided into four partially overlapping phases: hemostasis, inflammation, proliferative, and remodeling. These phases involve a large number of cell types, extracellular components, growth factors, and cytokines. Diabetes mellitus causes impaired wound healing by affecting one or more of the biological mechanisms of the process. Altered immune function can also lead to poor wound healing in people with diabetes. Meanwhile, decreased chemotaxis, phagocytosis, bacterial killing and decreased protein expression have been associated with the early stages of diabetic wound healing.

Various classification systems are used now to evaluate and determine the severity of the diabetic foot which attempts to include the different characteristics of the ulcer (i.e. location, depth, presence of neuropathy, infection, and ischemia). Wound healing is a complex and dynamic process, which is divided into four phases: hemostasis, inflammation, proliferative phase and remodeling. The following describes each phase of wound healing . Circulatory dysfunction, both at the microvascular and

macrovascular levels, is a major factor in delaying or hindering wound healing in diabetes. The main principles of ulcer treatment are wound debridement, pressure relief, revascularization, and infection management[5].

Hemostatic Phase

Hemostasis, is the first step in tissue repair due to injury. Hemostasis stops bleeding at the site of vascular injury and maintains vascular integrity through clot formation. This regulated physiological process consists of complex interactions between endothelial cells, platelets, von Willebrand factor and coagulation factors. Platelets play a major role in this process. Active platelets release proteins that induce migration and adhesion of neutrophils and monocytes, as well as several growth factors, such as platelet-derived growth factor (PDGF) and transforming growth factor-b (TGF-b), which aid in wound healing.

Platelets and coagulation support each other and by the interaction between platelets and coagulation, hemostasis is more effective than the two separate processes. This is relevant because impaired interactions between platelets and coagulation can lead to bleeding complications, and excessive platelet coagulation interactions induce a high thrombotic risk.

Inflammatory Phase

Inflammatory or inflammatory phase wound healing begins soon after injury, because cells become inflamed around the wound. The first cells to infiltrate injured tissue are neutrophils. Adhesive molecules on the surface of the vascular endothelium surrounding the damaged tissue are activated and thus the neutrophils adhere to the endothelium.

The inflammatory phase begins once hemostasis is achieved, and the main goal of treatment in this phase is to clear pathogens and foreign bodies from the wound and arrest damage.

Proliferation Phase

After about 3 days from the initial wound, the proliferative phase centers around the fibroblasts and expels collagen and underlying tissue substance from the previously injured area. Meanwhile, endothelial cells enter a phase of rapid growth and angiogenesis takes place within the granulation tissue, creating a rich vascular network that supplies this highly active healing area.

Remodeling Phase

Factors that cause foot ulcer healing. The results of the study show that there is a relationship between the nerves and the immune system in wound healing.

CLASSIFICATION OF FOOT ULCERS

The Meggitt-Wagner classification is one of the most popular validated classifications for foot ulcers (Table 1).

Table1. Classification of foot ulcers.

Grade	Description of the ulcer
0	Lesions before or after ulceration undergo complete epithelialization
1	Full-thickness superficial ulcer confined to the dermis, not extending subcutis
2	Ulcers on the skin extending through the subcutis with exposed tendon or bone and without osteomyelitis or abscess formation
3	Deep ulcer with osteomyelitis or abscess formation
4	Localized gangrene of toes or forelegs
5	Foot with extensive gangrene

III. RESULT

FOOT ULCER WOUND CARE MANAGEMENT

Standard wound care is very important which includes debridement, offloading, keeping the wound moist, edema control, and infection control as well as education about foot care needs to be taught to patients and their families. In addition to these principles, multidisciplinary diabetic foot care is now a mainstay of therapy. Standard treatment of diabetic ulcers includes measures to optimize glycemic control as well as extensive debridement, elimination of infection with antibiotic therapy based on cultures of wound pathogens, use of moisturizing dressings, and reduction of high pressure from the wound bed.. Some things that must be done in the management of foot ulcer care are as follows;

Surgical Debridement,

Debridement should be performed on all chronic wounds to remove dead tissue, this is useful to improve healing and facilitate the production of granulation tissue. This debridement can be accomplished surgically, enzymatically, biologics, and through autolysis. Surgical debridement is performed with a scalpel, and is quick and effective in removing hyperkeratosis and dead tissue. Particular care must be taken to protect healthy tissue, which has the dark red or pink appearance of granulation tissue. Using a scalpel blade with the tip pointed at a 45° angle, all non-viable tissue should be removed until a healthy bleeding ulcer is produced by suturing the wound edges. If severe ischemia is suspected, aggressive debridement should be delayed until a vascular examination is performed and, if necessary, revascularization procedures are performed.

Enzymatic debridement can be accomplished using a variety of enzymatic agents, including crab-derived collagenase, krill collagen, papain, a combination of streptokinase and streptodornase, and dextran.[53] It is able to remove necrotic tissue without damaging healthy tissue. Although expensive, enzymatic debridement is indicated for ischemic ulcers because surgical debridement is very painful in these cases.

Biological debridement has been implemented recently using sterile maggots. Maggots have the ability to ingest only surface debris, bacteria, and necrotic tissue, leaving healthy tissue intact. Recent reports have shown that this method is also effective in removing drug-resistant pathogens, such as methicillin-resistant Staphylococcus aureus, from the wound surface..

Autolytic debridement involves the use of dressings that create a moist wound environment so that host defense mechanisms (neutrophils, macrophages) can clean damaged tissue using the body's enzymes. Autolysis is enhanced by the use of appropriate dressings, such as hydrocolloids, hydrogels and films. Autolysis is highly selective, avoiding damage to the surrounding skin.

Keeping The Wound Moist

There are several ways to treat foot ulcers, one of which is the "moist wound healing" model. The results show that wound care with the moist wound healing method keeps the wound moist, thus accelerating tissue growth and accelerating wound healing.. This model uses hydrogel, because wound care with hydrogel provides benefits for wound healing making the area moist, hydrogel is a material that is comfortable, non-sticky and easy to replace with the effect of reducing pain for injured tissue and can reduce wound temperature. Hydrogel-based wound dressings exhibit discrete absorption capabilities, allow gas exchange (i.e., oxygen, CO_2, H_2O), avoid patient pain during their removal, promote tissue granulation and be able to lower wound bed temperature.. However, there are results of other studies that compare models of wound care; negative pressure wound therapy (NPWT) and standard moist wound care (SMWC), the results show that the NPWT model is more effective and efficient. This is important to be reviewed which is the novelty of this research, namely by paying attention to other factors such as dietary and spiritual problems.

Oxygen balance in the wound (O), there are therapeutic options available to restore oxygen balance which include wound dressings or sprays as well as normobaric or hyperbaric oxygen therapy. Wound care to provide moisture using hydrogel, hydrogel provides benefits for wound healing making the area moist, hydrogel is a material that is comfortable, non-sticky and easy to replace with the effect of reducing pain for injured tissue and can reduce wound temperature. Hydrogel-based wound dressings exhibit discrete absorption capabilities, allow gas exchange (i.e., oxygen, CO_2, H_2O), avoid patient pain during their removal, promote tissue granulation and be able to lower wound bed temperature.

Wet wounds made under sterile conditions, here treated with low concentrations of antibiotics, exhibited a significantly smaller macroscopic scar surface area in all experimental wound groups compared to dry wounds.. Moist wound healing is the practice of keeping wounds in an optimally moist environment to promote healing. Studies have shown that moist wounds heal three to five times faster than wounds that are allowed to dry out.

Avoid mechanical stress of the feet,

Diabetic wound healing is disturbed by external and internal factors as well as its biology. Control for prevention is important, in addition to external factors including repeated trauma or mechanical stress applied to the feet that are sensitive due to neuropathy and ischemia due to macro or microvascular disease., so the necessary care is to avoid mechanical stress on the feet.

Infection control

Impaired healing in diabetes is the result of a complex pathophysiology involving vascular, neuropathic, immunological and biochemical components. The vascular changes seen in diabetics are also important due to reduced migration of leukocytes into the wound, making it more susceptible to infection. Thickening of the basement membrane of capillaries and arteries is common in diabetics, leading to impaired wound healing and persistent ulceration.

Infection control , can be done with antimicrobials. Usually, systemic antibiotic treatment is only indicated for the true infection. For local infections, antiseptics such as polyhexanide and octenidine or wound dressings with antimicrobial effect, which contain silver, honey, or dialkyl carbamoyl chloride (DACC), are commonly used in topical treatment of chronic wounds.. Wound care tissue management (T) Tissue management includes various methods of debridement and wound cleaning, for example with hypochlorite solutions[50], drug-free wound dressings.

Glycemic Control

Diabetes is a heterogeneous metabolic disorder characterized by dysfunctional hyperglycemia, insulin secretion,

insufficient insulin action, or both. Diabetes mellitus (DM) is defined as a group of metabolic pathologies characterized by impaired insulin production and/or function, leading to hyperglycemia. Diabetes is a chronic metabolic disease characterized by elevated blood glucose (or blood sugar) levels, which over time causes serious damage to the heart, blood vessels, eyes, kidneys and nerves.

DM causes hyperglycemia correlated with rigidity of blood vessels causing slower blood flow and microvascular dysfunction, resulting in decreased tissue oxidation. High glucose also impairs proliferation and migration of oral keratinocytes and possibly induces cell death through promoting delayed cell differentiation and downregulation of enzymatic antioxidants., and revealed where hyperglycemia can inhibit wound healing in diabetes.

Standard treatment of diabetic ulcers includes steps to optimize glycemic control. This glycemic control must be followed by diet in DM sufferers. Diet is an important part of the lifestyle of people with diabetes. The key to eating with diabetes is eating a variety of healthy foods from all food groups, in standardized amounts. Stakeholders (health care providers, health facilities, institutions involved in diabetes care, etc.) should encourage patients to understand the importance of diet in managing diabetes.. Unhealthy behaviors, including diet and physical activity, coupled with a genetic predisposition, increase the incidence and severity of type 2 diabetes Diabetes (T2D). For individual specificity, the right diet depends on the genotype of the person, and the microbiota is very important for T2D prevention and intervention.

Due to hyperglycemia, diabetic patients are at increased risk of comorbid conditions affecting multiple organs . Diabetic foot ulcers are one of the most common complications of patients who have poorly controlled diabetes mellitus. It is usually caused by poor glycemic control, underlying neuropathy, peripheral vascular disease, or poor foot care. Diabetes mellitus causes impaired wound healing by affecting one or more biological mechanisms, precipitated by hyperglycemia, chronic inflammation, micro- and macro-circulatory dysfunction, hypoxia, autonomic and sensory neuropathy, and disturbances of neuropeptide signaling.

Dietary Compliance,

Patient non-adherence to dietary recommendations is associated with low disease acceptance rates. The concept of dietary adherence implies the process of following a dietary plan in a way that self-monitors, maintains, and prevents relapse. Dietary adherence is facilitated by antecedents consisting of motivation, understanding dietary recommendations, developing appropriate health beliefs, self-efficacy, setting achievable goals, and receiving social support. Most people with type 2 diabetes mellitus adhere to the type 2 diabetes mellitus diet. Dietary adherence was not significantly associated with cardiovascular risk factors and renal function among patients with Diabetic Nephropathy.

A diet rich in whole grains, fruits, vegetables, legumes, nuts, moderate alcohol consumption, and low in refined grains, red/processed meat, and sugary drinks has been shown to reduce diabetes risk and improve glycemic control and blood lipids in patients. Other studies also suggest that for reducing body weight and maintaining a healthy weight, reducing energy intake, and intake of foods high in vegetables, fruit, whole grains, legumes, nuts, and dairy products is a core part of dietary management.

IV. CONCLUSION

Management of ulcer wound care is very important which includes debridement, offloading, keeping the wound moist, edema control, and infection control as well as education about foot care needs to be taught to patients and their families, multidisciplinary diabetic foot care is now a mainstay therapy as well as prevention by reducing high pressure on the wound.

CONFLICT OF INTEREST
No conflicts of interest have been declared

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The Effectiveness of Birth Ball Exercise in Primipara Self-Efficacy in Normal Childbirth

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Abstract--- Introduction: Fear, anxiety, and self-doubt are all present when a mother is about to give birth. This tension can put pressure on the cervix and uterus, which will result in more pain. By enhancing pelvic flexibility, mobility, and the position of the fetus, birthing ball exercises can minimize pain while also enhancing a woman's emotional wellbeing, minimizing interventions during labor, and promoting an accelerated birth process. The goal of this study was to evaluate the Birth Ball Exercise's impact on primipara self-efficacy during routine childbirth. Methods: The quasi-experimental research design consisted of a control group and an intervention group with a total sample of 30 people. The research was carried out for 3 months at the independent midwife practice in the city of Padang. Sampling used the consecutive sampling technique with data analysis using an independent t test. Results: This study found a significant difference in the level of self-efficacy between the group of mothers who did birth ball exercises and the control group in primiparous women with a p value of 0.003. Conclusions: Birth Ball exercise is very effective for self-efficacy in primipara and should be done since the third trimester of pregnancy. It can be held in an integrated manner in classes for pregnant women.

Keywords-- Birth Ball Exercise, Primipara, Self-Efficacy

I. INTRODUCTION

Pregnancy is a period that will end with the birth of a baby. During pregnancy, a woman experiences many changes, both physical and psychologicaloman experiences many changes, both physical and psychological. This is related to the biological changes that occur. The increased stress felt during pregnancy can be due to the physical and psychological changes that occur during the early and late trimesters. Stress levels increase in the third trimester of pregnancy because, at this time, pregnant women are nearing delivery [1]. When a mother faces the birth process accompanied by fear and is very anxious and tense, unsure of herself, this tension can cause pressure on the cervix and uterus, causing more pain. The perception of pain in labour is closely related to the intensity of pain felt by the mother. Factors that influence the perception of pain include emotional, motivational, socio-cultural, and self-confidence factors. Self-confidence during labour is defined as the mother's belief in her ability to deal with the pain she feels so that she can control and deal with pain naturally so that the delivery process goes smoothly [2].

The coping strategy is one of the pain control strategies. In this method, self-efficacy as a coping method can be carried out by making women able to tolerate the pain and labour experience that is felt. This effect may be related to the body, and the patient's feelings increase. In addition, the birth ball is considered a non-invasive method used to control pain [3].

Birthing ball exercises can relieve women's fatigue and pain by increasing pelvic flexibility, mobility, and fetal position, so that they can simultaneously improve women's psychosocial well-being, reduce actions during the baby's birth process, and encourage acceleration of the birth process. Benefits of using a birthing ball or birth ball when processing The birth of a baby

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can be felt, especially at the start of the mother's contractions, which are believed to increase the size of the pelvic cavity [4].

A birthing ball is an alternative method to reduce the pain that commonly occurs in mothers during labour. According to [5], in recent years, birthing balls have been gradually used in childbirth because they have good flexibility and are also elastic. The elasticity and flexibility of the birthing ball are useful for relaxing the pelvic muscles and relieving pressure on the lowest part of the fetus, which will reduce labour pain. The use of a birth ball during labour can reduce pain levels because it stimulates postural reflexes and keeps the muscles and spine in good condition, thereby reducing anxiety, minimal use of pethidine, facilitating descent of the fetal head, reducing the duration of the 1st stage, and increasing maternal satisfaction and well-being. Besides that, it was also reported that mothers felt more comfortable and relaxed, and 95% of respondents stated that birth ball exercises could increase comfort. Another study found that the duration of the active phase of labour (opening of the uterine cervix) was 30% shorter and barriers during the second stage of labour decreased significantly in the exercise group [6]. The purpose of this study was to determine the effectiveness of the birth ball exercise on primipara self-efficacy in normal delivery.

II. Method

The independent variable in this study is the birth ball exercise, and the dependent variable is self-efficacy. The population of this study was composed of mothers who gave birth at PMB Nurhaida in Padang City from November 2022 to January 2023, with a total sample size of 15 people for the intervention group and 15 people for the control group in primiparous mothers. The quasi-experimental research design with a consecutive sampling technique. The criteria for the sample taken were primigravida, willingness to be a respondent, and not experiencing complications in pregnancy (abortion, preeclampsia, breech or transverse position, premature rupture of membranes). Data collection was carried out using a self-confidence scale questionnaire, and data analysis was done using the independent t test [7].

III. Result

The characteristics of the respondents in this study, distinguished by age and occupation, can be seen in Table 1.

Table 1. Characteristics Respondent

Characteristics	Groups			
	Intervention		Control	
	f (n=15)	%	f (n=15)	%
Age				
<20 years old	3	20	1	6,67
20-35 years old	12	80	14	93,33
Occupation				
Housewife	8	53,33	9	60
Civil Servant	4	26,67	2	13,33
Enterpriser	3	20	4	26,67

Based on Table 1, it can be seen that most of the respondents in the two groups are in the healthy reproductive age range, while for work, the majority are housewives. In this study, it was found that most of the respondents were in a healthy reproductive period; only a small number of respondents were aged 20 years. Age greatly influences a woman.

Table 2. Effect of Birth Ball Exercise on Self-efficacy in Primipara

Self efficacy	n	Mean	p-value
Intervention	15	131,2	0,003
Control	15	112,6	

Based on Table 2, this study found that the average self-efficacy in the intervention group was higher than the control group, with an average of 131.2 in the intervention group. There was a significant difference in the level of self-efficacy between the group of mothers who did birth ball exercises and the control group in primiparas, with a p value of < 0.05

IV. Discussion

In dealing with pregnancy and childbirth both physically and psychologically. Someone aged < 20 years may not be psychologically ready to face pregnancy or childbirth. Readiness for pregnancy is determined by three factors: physical, mental, and economic readiness. In general, women are said to be ready to get pregnant if they are over 20 years old. Psychologically, someone aged <20 years is less capable of making clinical decisions; besides that, their pregnancy is sometimes accompanied by diseases or conditions that are not normal, as well as delivery outcomes in the form of premature labour or low baby weight [8].

Childbirth is a complicated interrelationship between the psychological and physiological drives in a woman, the birth process, and the baby. Uterine contractions during labour are unique, considering that these contractions are physiological muscle contractions that cause pain in the body. These contractions are under the influence of intrinsic nerves, so women do not have physiological control over the frequency and duration of contractions [9].

Research conducted by [10] shows that birth ball exercises can reduce pain, reduce the use of analgesia, experience a shorter first stage, and decrease the number of operative deliveries. Women who are in a state of fear, do not know what is happening to them, and are not prepared with relaxation and breathing techniques to deal with contractions will move uncontrollably even though the contractions are mild. On the other hand, if a woman is prepared for the experience of giving birth and gets support from professionals, she will show self-control when severe contractions occur.

Self-efficacy is a cognitive process that influences a person's motivation to behave [11]. Confidence in all of these abilities includes self-confidence, adaptability, cognitive ability, intelligence, and motivation to act in stressful situations. Self-efficacy will develop gradually and continuously in line with increasing abilities and related experiences [12].

The use of a birth ball makes the mother feel safe and comfortable while moving, which makes it easier for the fetus to move in the pelvis. The results of the same study were shown by (Eka, 2019) that primigravidae who received treatment in the form of birth ball exercises had higher coping values than the control group. The same thing was stated by [13] who concluded that birth ball exercises can reduce pain; this is shown by studies where the treatment group has a lower pain mean value compared to the control group.

Good self-efficacy will direct the mother to a stable mental condition so that she is able to receive directions. Pregnant and maternity women who have received preparation for childbirth in the form of a birth ball and psychological exercises will get a learning process and experience so that they can better prepare themselves for contractions and adapt to pain and discomfort during the delivery process [14]. This self-efficacy determines how much confidence each individual has in carrying out his learning process so that he can achieve optimal results. Individuals who have high self-efficacy will be able to organize themselves to learn. There is confidence in him that he will be able to complete any difficult task while studying; he has the belief that he is able to complete various kinds of tasks and strives hard to complete all assignments. This will encourage individuals to be able to plan their activities during childbirth, try to monitor them, and manipulate the environment in such a way as to support their activities. Thus, it can be seen that if the individual's self-efficacy is low, it can cause obstacles in the adaptation process even though the individual has great potential. High self-efficacy causes the emergence of highly self-regulated learning. Midwives, as providers of care in childbirth, have a duty to facilitate mothers during the birth process by always providing support both physically and psychologically. Physical support in the form of preparing a room that makes the mother feel comfortable, safe, and familiar, providing non-pharmacological pain reduction techniques, and psychological support in the form of giving the family the opportunity to accompany the mother during childbirth and the empathetic and respectful attitude of midwives [15].

Another factor that can affect self-regulated learning is family social support, which has an important role because the family is the person closest to the individual. If an individual gets emotional support from his family when facing obstacles in learning, he will get support from his family so that he still feels more confident and is still able to plan and control his learning activities and take advantage of his environment. When a birthing mother is given positive appreciation, for example, in the form of praise from her family, she will feel that she is valuable enough that while studying, she has the urge to organize and

monitor, selecting an environment that is conducive to the delivery process. Information support provided by the family will also help someone get good information [16].

V. CONCLUSION

From this study, it can be concluded that there is a relationship between birth ball training and primiparous self-efficacy in normal delivery. There are differences in the level of self-efficacy of mothers giving birth to mothers with birth ball exercises and mothers without birth ball exercises in the birth ball exercise group and the control group. There was an increase in self-efficacy of 6.48 points in primiparous women after doing the birth ball exercise.

Advice given to midwife practitioners is physical exercise in the form of birth ball exercises, preferably carried out since the 3rd trimester of pregnancy, which can be held in an integrated manner in pregnant women's classes. Availability of variations in physical training facilities for pregnant women and giving birth at delivery service places.

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Special Educational For Parents Of Premature: A Scoping Review

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Abstract--- Premature babies require special care. Parents need education so they can take good care of their babies. objective to identify special educational materials for parents to care for their preterm baby. This study used scoping review of databases: ScienceDirect, Scopus and ProQuest. Inclusion criteria were data based articles: 1) published in English between 2021 and 2023, 2) Focused on material education for parent with baby premature. Twenty one articles were found and selected for review. We identified material education needed for parent with baby premature, educational media for parents with premature babies, and method of providing education. Apropriate educational materials and media for parents with premature babies can increase readiness to caring baby premature.

Keywords-- material education; premature; breastfeeding; parents need

I. INTRODUCTION

Premature babies are babies born before the 37th week of pregnancy. Premature babies experience several physical, emotional and psychological problems compared to normal babies [1],[2],[3]. The prevalence of premature babies is one in ten births each year, and this number continues to increase [4],[5]. Premature birth affects the health and development of the baby in the short, medium and long term [6],[7]. Studies show that around 50% of premature children with low birth weight will experience developmental difficulties such as severe disabilities, mental retardation, cerebral palsy, blindness, deafness and epilepsy[8],[9]. Therefore, it is necessary to plan to reduce disability, complications, and premature infant mortality [10]. Premature birth also has an impact on mothers, parents, families and the wider community [11]. Meeting the health needs of families with premature babies requires responsive health services not only during hospital admission but also after the home transition.

The home transition is very important. parents must have readiness in caring for premature babies at home. Information shortage among parents, especially moms of premature babies, brought about in a need of data around their babies' day by day needs taking after healing center release. It could be a caution sign for neonatal medical attendants to assist moms create the suitable aptitudes to secure their babies from any unsafe circumstance after clinic release. Back and instruction can offer assistance figure it out the want of moms to oversee care exercises on their premature babies [12],[13] and help the move to parenthood [14]. It is additionally pivotal for community wellbeing medical attendants in specific to supply wellbeing instruction [15]. The perspective makes a difference guarantee coherence of care taking after neonatal intensive care unit discharge. It made a difference teach moms about intervention program and was too aiming to motivate dynamic family inclusion within the care of their untimely infant. Thus, down to earth caregiving exercises for early infant care at home must be underlined.

Besides, fundamental care for early infant, such as giving warmth, giving early and select breastfeeding, clean hones and giving neonatal resuscitation when fundamental, is important for moms. In any case, additional consideration to warm care, like kangaroo mother care (KMC), warmers and incubators, and child caps and covers, is the most center of care for babies premature. Other than that, the direct moreover gives additional consideration to skincare and infection control, support for

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breastfeeding, counting express breast milk (EBM), feeding, and secure oxygen utilize in the event that required with near checking [16]. Based on the discourse, it is basic to recognize the guardians and families, particularly the mother, as accomplices within the care.

Sharing the researcher's encounters, guardians of babies conceded to the NICU continually voice up and share their sentiments of insufficiency, fear and ignorance approximately things they don't know. They feel that they are insignificant guardians and confounded approximately their part to be played within the unit. This circumstance can be talked about in that they require sufficient data around their baby's status and instruction for newborn child care to bargain with their sentiments. This articulation is in line with the think about to recognize holes within the require for untimely birth that has been carried out [17],[18].

The analysts have uncovered that guardians feel they are not given sufficient data with respect to the care of their child whereas within the NICU. About 86% of the data given to guardians is conveyed verbally, 65% (brochure) and 59% (composed explanations). The study's discoveries moreover uncover that 13% of the 502 guardians overviewed require extra data, particularly on their newborn child nourishing and breastfeeding and the wants of back bunches. Aside from that, guardians appreciate having an involvement, having the capacity to hone, and having sufficient time to arrange a given errand. In expansion, most guardians are more concerned once the basic sources of data they require are replied pertinently some time recently the infant can be released. Subsequently, analysts emphatically concur that moms of untimely babies ought to be given exact and elements or contents education when caring for their babies after exit from the NICU[19].

Element or contents to caring baby premature: 1) information about premature; 2) risk against health problem; 3) sign and symptom of illness/ baby cues; 4) dealing with respiratory problems; 5) breastfeeding, 6) bottle feeding, 7) other methods of infant feeding; 8) body temperature measurement; 9) bathing a baby; 10) diapering; 11) skincare & cord care; 12) comfort/ excessive crying/ colic; 13) infant safety; 14) safe sleep/ SIDS prevention; 15) prevention of infection; 16) medication; 17) danger sign/ immediate emergency action; 18) growth & development, follow up visit and immunization; and 19) needs of support [19].

Education provided with the media of leaflets, videos and phantoms reduces anxiety and increases self-efficacy (Suyami, Rustina and Agustini, 2007). Education for three days using booklet and audiovisual learning media containing breastfeeding, breastfeeding techniques, nursing methods kangaroos, how to prevent infection, and danger signs in infants can increase mother's knowledge and skills caring for premature babies [20]. Kangaroo Mother Care Videos and Demonstrations increase self-efficacy[20], Home care videos for Low Birth Weight Babies are effective in improving parents' skills in breastfeeding and Kangaroo Mother Care techniques [21], Posters can increase mother's self efficacy in implementing kangaroo mother care[22]. Android application-based Health Education increases the independence of mothers in caring for premature babies [23].

As a result, current research is underway to identify components that are relevant to the basic knowledge of educational activities for parents of premature babies. Objective to identify special educational materials for parents to care for their preterm baby.

II. METHOD

The scoping review based on guidelines. A methodological framework consists of eight stages, specifically, 1) characterizing and adjusting the objective/s and question/s, 2) creating and adjusting the inclusion criteria with the objective/s and question/s, 3) portraying the arranged approach to prove looking, determination, information extraction, and introduction of the prove, 4) Looking for the prove, 5) selecting the prove, 6) extracting the prove, 7) analysis of the prove, and 8) presentation of the results [24]. The prove is summarized in connection to the reason of the review, making conclusions and noticing any suggestions of the discoveries.

The researchers described the research questions based on the study's objectives using the Population, Context, and Content (PCC) framework. PCC is recommended as a guide to construct clear and meaningful objectives and eligibility criteria for a scoping review [25]. The PCC framework is presented in Table 1. Articles were searched online access to databases

ScienceDirect, Scopus, and ProQuest, with limitation of publication year between 2021 and 2023. The keywords used in searching the articles are presented in Table 2.

Table 1. Population, Context, and Content (PCC) framework

Population	Concept	Context
Parents of low birth weight OR parents of preterm birth OR parents of premature infant	Need education OR Need Information OR material education	premature baby care OR preterm care

Table 2 Data source

No	Database	Keyword	Number of identified articles
1	ScienceDirect	Parents of low birth weight OR parents of preterm birth OR parents of premature infant AND Need education OR material education AND premature baby care in NICU OR preterm care in NICU	1456
2	SQOPUS	(parents AND of AND low AND birth AND weight) OR (parents AND of AND preterm AND birth) OR (parents AND of AND premature AND infant) AND (need AND education) OR (material AND education) AND (premature AND baby AND care) OR (preterm AND care) AND PUBYEAR > 2020 AND PUBYEAR < 2023	978
3	ProQuest	Parents of preterm birth OR parents of premature infant AND material education AND premature baby care in NICU OR preterm care in NICU NOT Pregnant	1255
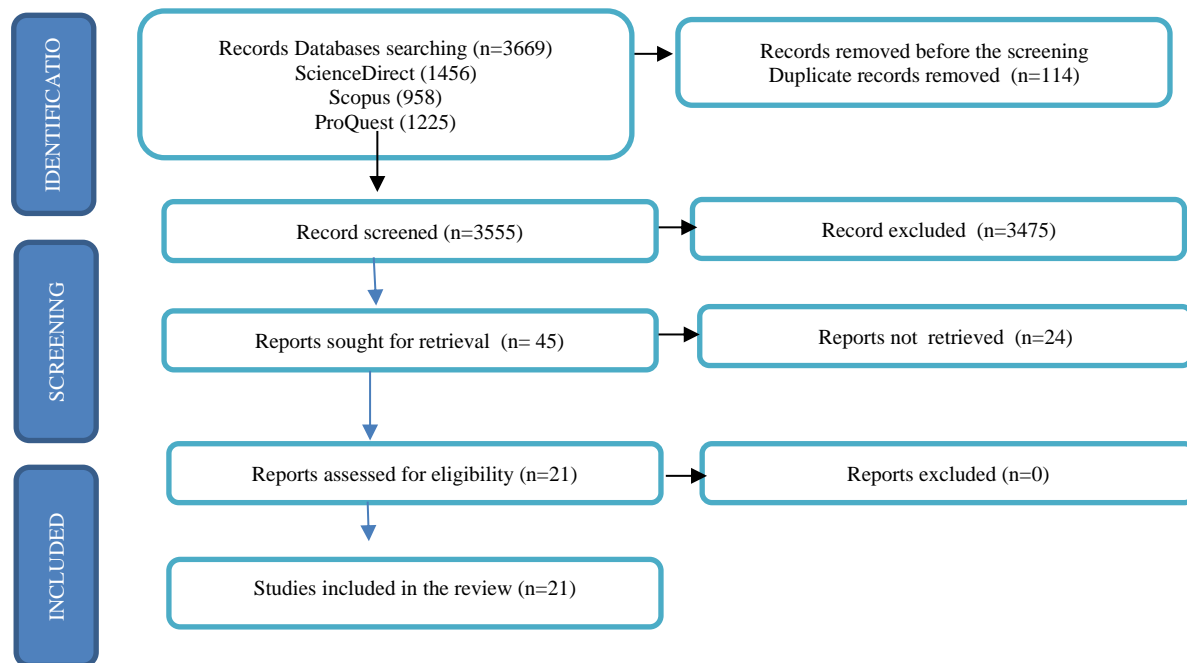
Figure 1: Flow diagram of study selection (PRISMA)

Inclusion criteria were data based articles: 1) published in English between 2021 and 2023, 2) Focused on material education for parent with baby premature. Exclusion criteria Article were excluded if partisipants were pregnant women, preterm babies with COVID-19 and preterm babies with congenital abnormalities.he choice of articles is displayed within the PRISMA chart (Fig. 1). The PRISMA stream chart appears that there were 3555 articles gotten from three databases. Determination of articles was performed based on the foreordained inclusion and exclusion criteria. This consider gotten 21 important articles, and from these comes about, a basic examination was conducted utilizing the Joanna Briggs Institute (JBI) handbook [24].

Data extraction was conducted on the 21 articles that were found within the past arrange. The gathering of data from each article was organized into a few segments, alluding to [24], which are as takes after: (1)author and year of distribution, (2)

country, (3) title, (4) study design, (5) Number of subjects/ Sample characteristics, (6) Methods of data collection, (7) Findings. This Data extraction is appeared in Table 3

III. RESULT

Figure 1 Descriptive characteristics of the studies, the primary search of databases resulted in 3669 articles, and 3555 articles were found after duplicates were removed. Next, 3475 articles were excluded because they were not available in full text, were not in English, and no material about the educational needs of parents with premature babies. The remaining 21 articles were included for critical appraisal. These studies were published between 2021 and 2023 and conducted in Iran, Canada, USA (United States of America), Indonesia, India, Australia, Oman, Ghana, Kenya, California, Korea, and Malaysia (Table 3).

Of the 21 selected articles, three thema about need education for parent baby premature is identified as follows:
Material education needed for parent with baby premature: a) information about premature, b) basic physical care such as changing diapers, bathing a baby, skincare & cord care, massaging preterm infants, changing the infant's position, and rest and sleep patterns, breastfeeding, feeding, kangaroo mother care, and Maintaining the infant body temperature, c) identification and management of danger signs at home, d) growth and development in preterm babies, e) infection control,) immunizations.
Educational media for parents with premature babies : pictures, video, parent handouts, booklet, mobile phone software, mHealth application for preterm home care, the digital-based follow-up program, educational media booklets, visual aids and mobile health technology, e-book education and tablet-based education, technology-based discharge planning interventions, Digital educational program and multimedia educational information on NICU infant care.
Method of providing education are breastfeeding meetings, training and counseling sessions, training programmes, demonstrate skills.

IV. DISCUSSION

Maternal education with a focus on how to care for their premature infant. information about premature [26][27][28]. Material about premature babies is very important so that parents have knowledge about how to care for premature babies. The needs for care exercises that have been distinguished to offer an understanding to moms for best acknowledge the nearness of their untimely child and organize the care handle after discharge. mothers want to get information about physiology signs at home to keep their babies safe, parents be able to recognize the signs and symptoms of an emergency. Therefore, mothers need educational materials to tell the practice what is needed, who should to refer and where to take the baby if his health status decrease [19]. Contents of premature infant such as Characteristics and conditions of a untimely newborn child, counting the physical condition and appearance of the untimely newborn child, early issues which will happen due to rashness [29]. other educational materials problems of premature infants, sleeping and waking patterns, stress symptoms in premature infants and ways to alleviate them and how touching the infant [26] and nfant health concerns [30].

Material basic physical care such as changing diapers [26][30][19], bathing a baby [19][31], skincare & cord care [19], massaging preterm infants [31], changing the infant's position [32], and rest and sleep patterns [19][32][26], breastfeeding [19][32][33][34][26][31][35] [30], feeding [33][34][26][31][35][36][37][38][39][40][41][30][42][19], kangaroo mother care [34][33][36][37], and Maintaining the infant body temperature [26][37][43][30][42][19][38].

Basic physical care or daily care premature babies is the most discussed feeding, breastfeeding and Maintaining the infant body temperature. Feeding and breastfeeding are inseparable parts of caring for premature babies. Content feeding and breastfeeding such us breastfeeding and feeding [30] Breastfeeding techniques and diet [32], continue oral feedings, breastfeeding benefits, non-nutritive sucking, cue-based feeding, and increased weight gain [33], breastfeeding, cup feeding and/or bottle feeding, mixing formula [34], Training about preparation of mother to breasfeeding, milking by hand and types of milking methods, training to start feeding with a syringe or dropper, how to collect and store breast milk, how to hug the infant, and help to perform breastfeeding [26], breast milk expression and paladai feeding, breastfeeding and burping [31],

breastfeeding, formula milk and bottle preparation, feeding, feeding patterns [35], infant feeding [36][38][41][42], feeding the critically ill neonates [37], Nutrition and feeding, Human milk expression [39], fulfilling the baby's nutritional needs [43], breastfeeding, bottle feeding, other methods of infant feeding [19].

Educational media for parents with premature babies : booklet of Care and Maintenance of Premature Infants [32][36], pictures and videos from the internet to enhance the education and guidelines for discharge [34], video, parent handouts, and booklet [44], mobile phone software [29], mHealth application for preterm home care [31], digital-based follow-up program [45], booklets, other visual aids and mobile health technology [35], visual aids [38], e-book education, and tablet-based education [39], technology-based discharge planning interventions [43], mobile application [41], digital educational program with parents of preterm infants [46]. can be concluded educational media are booklet, pictures, video, parent handouts, visual aids, mobile health education or technology, e-book education, and mobile application. The best educational media are those that use technology because there are interesting pictures and can be reopened when the patient returns home.

Method of providing education are breastfeeding meetings, The facilitation of transition from gavage to breast in preterm infants is carried out by caregivers through the implementation of several supportive techniques, including skin-to-skin contact, non-nutritive sucking, and feeding based on infant cues. The empirical evidence suggests that direct breastfeeding has a positive impact on the exclusive breastfeeding rates at the time of hospital discharge. Medical stability of infants serves as the threshold for the commencement of interventions, which ought to be sustained for as long as medical stability persists. The physiologic stability was exhibited. [33], person home visits, phone/video calls, text messages, periodic email questionnaire, mobile/website apps, and online social networking sites [47].

Training program and counseling sessions. The training is carried out in more than one session, this training is in the form of 5 sessions which contain about: 1) getting familiar with the neonatal intensive care units (NICUs) and equipment and its rules and regulations, problems of premature infants, sleeping and waking patterns, stress symptoms in premature infants and ways to alleviate them, washing hands, touching the infant, and the role of parents in the care of a premature infant. 2) Teaching the principles and correct methods of regular daily care for premature infants 3) Offering instructions on psychological issues regarding participation and the presence of the father and emphasizing the supportive role of the father and assisting couples in emotional adaptation. 4) Training related to feeding and breastfeeding, 5) Familiarity of parents with the stress process and its consequences, the significance of stress reduction and muscle relaxation training, vaccination, and effective communication with the infant [26], The counseling room is used to share information with families. the doctor will convince the family about the child's condition to them. Counseling sessions are also used to educate the family and answer all their questions to relieve anxiety. Te clinicians educate families about clothing babies, feeding critically ill neonates and maintain the body temperature of neonates through Kangaroo Care and extra clothing [37][38].

Demonstrate skills [40] parents' ability to develop skills in caring for their babies is important. This is a requirement that parents want to be involved in the care of their baby. Parents appreciate when staff demonstrate skills and support them to do skills afterwards. Both father and mother found this support useful on their way back home and it is expected that neonatal unit staff will provide an enabling environment to support their skills in feeding, bathing, massaging and handling their babies. directly involved parents baby care they feel empowered and more confident in them parenting skills.

V. CONCLUSION

The scope of the present study has highlighted the education need for parent with baby premature. Appropriate educational materials, educational media that suit the needs and provision of appropriate education greatly affect the readiness of parents in caring for premature babies.

CONFLICT OF INTEREST
No conflict of interest has been declared

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APPENDIX

Table 3 : Data from the eligible studies

No	Author, Year	Country	Title	Study design	Number of subjects/ Sample characteristics	Methods of data collection	Findings
1	[32]	Iran	The effect of telenursing on the rate of newborn readmission	Quasi-experimental study	288 mothers with premature newborns. Mothers were randomly assigned to intervention (144) and control group (144) after their infants' being discharged.	Intervention group, training was provided through telenursing every 6 days. Control group only the ordinary care. One month after the infant's being discharged from the hospital; both groups were surveyed regarding readmission.	Educational package was presented during 5 sessions. 1. Breastfeeding techniques and diet. 2. Changing the infant's position, and its rest and sleep patterns/ 3. Skin and perineal care. 4. Medication, medicine complications. 5. Dressing care (if any), infection control procedures, and the next visit to the doctor's office. Media education booklet of Care and Maintenance of Premature Infants
2	[44]	Canada	Interventions aimed at reducing the stress of mother's whose infant is born premature: A scoping review	Scoping review	Eighteen studies for analysis: 11 RCT, 7 Cohort or quasi-experimental	Use PRISMA framework. Four electronic Databases: Medline, PsychINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Embase. The key search terms included infant, premature, mental health, depression, postpartum, stress, psychological stress, and anxiety	Maternal education with a focus on how to care for their premature infant and/or NICU environment. Media education video, parent handouts, and booklet.
3	[33]	USA	Breastfeeding preterm infants as the initial oral feeding: An integrative review	Integrative review method	11 articles	Electronic databases PubMed, EBSCOhost, and ScienceDirect Journals the years 2017 and 2022	Educational material: continue oral feedings, skin-to-skin/kangaroo mother care (KMC), breastfeeding benefits, non-nutritive sucking, cue-based feeding, and increased weight gain. Media education breastfeeding meetings
4	[34]	Indonesia	Exploring Indonesian nurses' perspectives on preparing parents of preterm infants for hospital discharge: A qualitative study	A qualitative study	Eight participant	In-depth interview	The education focused on basic infant care about feeding (breastfeeding, cup feeding and/or bottle feeding, mixing formula), dressing, KMC implementation, and handling other situations such as utilizing medical equipment and medication preparation. Media education pictures and videos from the internet to enhance the education and guidelines for discharge,
5	[47]	USA	Scoping review of interventions to support families with preterm infants post-NICU discharge	Scoping review	26 articles	Databases PubMed, Web of Science, and CINAHL. Inclusion criteria published in English, between 2011 and 2021, focused on families with preterm infants, and interventions to reduce parental stress and provide	multimedia educational information on NICU infant care. methods and media education: person home visits, phone/video calls, text messages, periodic email questionnaire, mobile/website apps, and online social networking sites.

No	Author, Year	Country	Title	Study design	Number of subjects/ Sample characteristics	Methods of data collection	Findings
						support to families with preterm infants post-NICU discharge	
6	[26]	Iran	The Effect of Family-Centered Educational Supportive Intervention on Parental Stress of Premature Infants Hospitalized in the NICU	Quasi experimental study	80 parent of premature infant, in two groups of 40 intervention and control,	The intervention group received five sessions of a family-centered educational support program in five days, with an average of 60 minutes per session, and the control group received only routine training and care	Educational Supportive Intervention: Session 1 Introduction, getting familiar with the neonatal intensive care units (NICUs) and equipment and its rules and regulations, appearance, problems of premature infants, sleeping and waking patterns, stress symptoms in premature infants and ways to alleviate them, washing hands, touching the infant, and the role of parents in the care of a premature infant. Session 2 Teaching the principles and correct methods of regular daily care for premature infants, bathing, maintaining proper body temperature and clothing, changing diapers, umbilical cord care, the importance of embracing and performing kangaroo care, and the effect of simultaneous parental involvement in infant care and physical contact on physiological indicators and psychosocial nourishment of the infant. Session 3 Offering instructions on psychological issues regarding participation and the presence of the father and emphasizing the supportive role of the father and assisting couples in emotional adaptation and participation, encouraging couples to express thoughts and feelings related to the ward and the premature infant, instructing techniques of emotional disclosure and venting such as parents talking about their stress and worries. Session 4 Training related to feeding and breastfeeding (preparation of mother, milking by hand and types of milking methods), training to start feeding with a syringe or dropper, how to collect and store breast milk, how to hug the infant, and help to perform breastfeeding. Session 5 Familiarity of parents with the stress process and its consequences, the significance of stress reduction and muscle relaxation training, vaccination, and effective communication with the infant. Methods education training and counseling sessions
7	[27]	Iran	The impact of a mobile health intervention on the sense of	Quasi-experimental design,	72 mother, in two groups of 36 intervention and control	Both groups were selected from an educational medical center. Initially they completed three questionnaires of demographic, SOC and	Educational contents of application: Premature infant, Premature infant nutrition, Common problems of premature infant, Premature infant hygiene, Premature infant living

No	Author, Year	Country	Title	Study design	Number of subjects/ Sample characteristics	Methods of data collection	Findings
			coherence and quality of life of mothers with premature infants			QoL in the hospital. Three months after the intervention, the participants completed the questionnaires of SOC, and QoL via software application.	environment, Premature infant transfer and movement, Common problems of mother, and Mental health. educational media with mobile phone software.
8	[48]	India	Effectiveness of mHealth application in improving knowledge of mothers on preterm home care	RCT	160 mothers (80 in the intervention and 80 in the control)	The intervention group received the mHealth application for preterm home care. The app had a simple interface which was easy to navigate. The participants in the control group received standard discharge instructions from the neonatal nurses	Health education: Kangaroo Mother Care, breast milk expression and paladai feeding, breastfeeding and burping, bathing and massaging preterm infants, growth monitoring, complementary Feeding, age-appropriate stimulating activities/play to promote optimal growth and development in preterm babies, identification and management of danger signs at home. educational media mHealth application for preterm home care
9	[49]	India	A digital-based follow-up program to improve maternal competence in preterm home care- A true-experimental study	True experimental	80 mother of preterm infant, in two groups of 40 intervention and control,	Groups intervention and control given a pretest. Group intervention use digital-based follow-up program was divided into five phases. The first three phases of intervention took place in the hospital. The fourth and fifth phases were completed at home. The members of the control group received routine discharge education from the hospital staff. They were given a homecare guide sheet by the researchers. A posttest was given to mothers in both groups to assess their competence after 7 days of discharge. The posttest was carried out at home.	the digital-based follow-up program was divided into five phases. 1) Using appropriate AV aids, family-centered health education was provided. 2) Procedures such as medication administration (oral), burping technique, and oil massage were demonstrated. 3) A homecare guide sheet with DOs and DONTs in preterm newborn home care was provided. 4) A video call to clarify any concerns, reassure mothers, and track progress. This was done up to one week after the baby was discharged from the hospital. 5) A home visit on the first day to monitor mothers' baby care and make any necessary corrections. educational media digital-based follow-up program
10	[35]	Australia	The transition home of extremely premature babies: An integrative review	An integrative review method	32 article	databases: CINAHL, Medline, PsychInfo, Embase, Maternity and Infant Care and Google Scholar.	Educational specific needs of the extremely premature baby: breastfeeding, formula milk and bottle preparation, feeding, feeding patterns and infant cues, normal bowel and bladder function. educational media booklets, other visual aids and mobile health technology.
11	[36]	Oman	Effectiveness of Nurse led structured teaching programme	A quantitative pre-experimental one group pre-test post-	30 postnatal mothers of LBW babies	The knowledge and practices of postnatal mothers on the care of LBW babies was tested using a structured interview	Material education caring of LBW babies general information, feeding, KMC, stimulation, and recognition of early warning signs. educational media booklet.

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No	Author, Year	Country	Title	Study design	Number of subjects/ Sample characteristics	Methods of data collection	Findings
			on knowledge and practice of postnatal mothers on low birth weight care	test research study		schedule and a checklist before the administration of NLSTP. Thereafter, the NLSTP was conducted using an educational booklet. After the NLSTP, the knowledge and practice were assessed on the 7th day	
12	[37]	Ghana	Experiences and contextual practices of family-centered care in Ghanaian nicus: a qualitative study of families and clinicians	A qualitative exploratory descriptive design	84 participants	24 individual interviews and 12 FGDs	the clinicians educated families on the clothing of the babies, feeding the critically ill neonates and maintaining the neonates' body temperature via Kangaroo Care and extra clothes. Educational media counselling sessions.
13	[38]	Kenya	Parents, healthcare professionals and other stakeholders' experiences of caring for babies born too soon in a lowresource setting: a qualitative study of essential newborn care for preterm infants in Kenya	A qualitative study	Nineteen mothers and family members	Focus group discussions	Material education thermoregulation, infection Control, infant feeding and Kangaroo Mother Care. Educational media visual aid and training programmes
14	[39]	California	Increasing Parent Satisfaction With Discharge Planning	Mix methods study	33 nurses, 159 families	Intervention 1(e-Book Discharge Education), Intervention 2(e-Book Improvements), Intervention 3(Integration of the e-Book Into EHR Patient Portal), Intervention 4(EHR Patient Portal Improvements), Intervention 5(Postdischarge Follow-up)	Education Topics: Newborn care, Newborn screening tests, Nutrition and feeding, Human milk expression, Transition to home and Immunizations. Educational media e-book education, and tablet-based education.
15	[40]	Australia	Support needs of parents in neonatal intensive care unit: An integrative review	The integrative review	24 studies	Six databases— MEDLINE, CINHAL, PubMed, Scopus, Google Scholar and PsycINFO—were searched for eligible studies using relevant keywords. Primary	Informational support: infant feeding, recognising signs of ill-health, parental role, equipment use, update on infants' health status, infants' supplies and follow-up procedures post-discharge Educational media demonstrate skills

No	Author, Year	Country	Title	Study design	Number of subjects/ Sample characteristics	Methods of data collection	Findings
						studies published in English language from 2010 to 2021	
16	[43]	Indonesia	Mothers' needs in discharge planning for low birth weight babies: A qualitative study	A qualitative study	8 mothers	semi-structured interviews	Information on routine baby care: maintaining body temperature, fulfilling the baby's nutritional needs, personal hygiene, supporting baby care, and the baby's growth and development. Educational media technology-based discharge planning interventions
17	[41]	Korea	Development of a mobile application focusing on developmental support care for Korean infants born prematurely: a methodological study	Mix Methods study	14 papers, six experts to content validity, eight experts developed mobile application, 10 parents of infants or premature infants.	application was developed using the analysis, design, development, implementation, and evaluation model.	Customized Information: Rearing (Feeding, Bathing, Diapering, Attachment), Growth and development. Educational media mobile application.
18	[30]	Indonesia	Indonesian mothers' beliefs on caring practices at home for preterm babies after hospital discharge: A qualitative study	A qualitative study	8 mother	in-depth interviews	basic physical care such as changing diapers, breastfeeding, feeding, kangaroo mother care, Infant health concerns, and Maintaining the infant body temperature
19	[42]	USA	What parents want to know about caring for their preterm infant: A longitudinal descriptive study	mixed methods secondary analysis were obtained from a multi-center exploratory prospective sequential cohort quasi experimental study	148 parents.	148 parents of infants ≤33 week gestation enrolled during the usual care phase of a multi-site quasi-experimental study, completing weekly surveys about their learning needs for the coming week and skills learned in the past week.	Learning infant's medical course, feeding, and parenting care infant care skills: temperature taking, infant behavioral cues, diapering, and skin-to-skin.
20	[19]	Malaysia	What's Mom Needs for Their Preemie After NICU Discharge? A Scoping Review	A Scoping Review	10 article	Electronic database EBSCOhost Medical database, which included Medline, Psychology and Behavioural Sciences Collection, and Ovid, grey literature, reference list, and the Google Scholar search engine,	The themes are include 1) information about premature; 2) risk against health problem; 3) sign and symptom of illness/ baby cues; 4) dealing with respiratory problems; 5) breastfeeding, 6) bottle feeding, 7) other methods of infant feeding; 8) body temperature measurement; 9) bathing a baby; 10) diapering; 11) skincare & cord care; 12) comfort/ excessive crying/ colic; 13) infant safety; 14) safe sleep/ SIDS prevention; 15) prevention of infection; 16) medication; 17) danger

No	Author, Year	Country	Title	Study design	Number of subjects/ Sample characteristics	Methods of data collection	Findings
							sign/ immediate emergency action; 18) growth & development, follow up visit and immunization; and 19) needs of support.
21	[46]	Canada	The development of a digital educational program with parents of preterm infants and neonatal nurses to meet parents educational needs	Mix methods	15 mothers, 5 fathers and 9 neonatal nurses.	one-on-one and group interviews were conducted in person or via a web platform	Digital educational program Section 1: The parental role in the neonatal unit (The feelings and emotions related to the integration of your new role as a parent in the neonatal unit, Steps in the development of your parental involvement, Actions to increase parental involvement and closeness with your infant Section 2: The appearance and behaviour of your infant (Everything you need to know regarding the characteristics of your infant – the feelings and emotions, The characteristics of the premature infant between 24 and 28 weeks of gestational age, The characteristics of the premature infant between 28 and 32 weeks of gestational age, The interpretation of your infant's behaviour Section 3: The neonatal environment (The feelings and emotions related to this environment, The medical equipment

The Effect of Counseling with Explotion Box About Responsive Feeding as a Preventive Effort Stunting of Mother's Knowledge at Puskesmas Pantoloan

Henrietta Imelda Tondong[1*], Arie Maineny[1], Ayu Febriyanti[1]

Abstract--- Responsive feeding is the ability to provide food for children in a responsive manner which is an effort to prevent stunting. The risk of stunting can occur in children with mothers who do not have adequate knowledge about responsive feeding. The lack of education about responsive feeding affects the low level of knowledge of mothers in this region. Explotion box media can be used as an interesting counseling media in increasing mother's knowledge. The Pantoloan Health Center was ranked second in terms of stunting in Palu City in 2020. This study aim to analyzes the effect of counseling using an explosion box media on responsive feeding as an effort to prevent stunting in the Pantoloan Health Center. The research method is Pre Experiment with One Group Pretest Posttest Design. Research population is mothers who have babies aged 6-24 months in Pantoloan Boya Village, Pantoloan Health Center. The sample in this study was 32 people, sampling using Simple Random Sampling with lottery technique. The results showed that there was an effect of counseling using an explosion box on responsive feeding as an effort to prevent stunting in the Pantoloan Health Center, which was obtained by p-value = 0.000 (<0.05) which means there is an effect. That there is an effect of counseling with an explosion box about responsive feeding as an effort to prevent stunting in the Pantoloan Health Center. Suggestions to the puskesmas to increase counseling about responsive feeding as an effort to prevent stunting.

Keywords-- Responsive Feeding, Explotion Box, Stunting

I. INTRODUCTION

One of the long-term nutritional problems caused by ongoing malnutrition is stunting (Izwardy, 2020). Indonesia ranks third among Southeast Asian countries in terms of stunting prevalence. Data from Levels And Trends In Child shows that there were 144.0 million stunted children worldwide under the age of five in 2019[1]. In Indonesia, stunting in children under five has recently decreased to 30.8% from 37.2% in 2013[2]. Central Sulawesi Province has the tenth highest stunting prevalence in Indonesia at 31.26%, although this figure has decreased from 2017 to 2019[3]. The stunting prevalence was 16.2% in 2020, far below the RPJMN target of 24.1%. Puskesmas Pantoloan ranks second in the Palu City Health Office's report on stunting in 2020, which is 224 toddlers (31.07%). According to preliminary data from the Pantoloan Health Center, in 2021 there were 173 (or 23.99%) stunted toddlers[4].

Parents who choose the wrong food are one of the risk factors for stunting. The role of mothers in understanding the value of responsive feeding can prevent stunting. Although feeding is responsive, parenting mistakes in the long run will endanger children's growth and development. The five principles of mothers to feed children actively and responsively are to feed children according to age, encourage children to eat, overcome hunger, feed children in a safe environment, and have fun while eating[5][6][7][8].

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Explotion Box is a cardboard visual graphic media that can be cube or hexagonal. Images and text about responsive groceries will be visible on both sides of the box when opened. Explotion Box is a new medium for the school literacy movement. To attract attention, train and improve cognitive levels through reading, moral reasoning ability, and student literacy. Counseling using this packaged media can arouse the interest of the mother and draw her to the information provided. The purpose of this study was to find out how counseling using explotion boxes affects the level of maternal understanding of responsive feeding in an effort to prevent stunting[9][10][11].

II. METHOD

This study was a pre-experimental study, with one group getting a pre and post test. The time for the research was on April 13 to June 30, 2022, at the Pantoloan Boya Health Center Working Area, Pantoloan Village. The population in this study was 127 people from 6 posyandu, namely mothers who had babies aged 6 to 24 months. The sample was 32 people. Sample technique using Probability Sampling in Simple Random Sampling with lottery method (homogeneous sample). The questionnaire was the measuring tool used in this study. Frequency distribution table of data collection results using questionnaires, obtained from respondents. Bivariate analysis with statistical test T-Test. This study has obtained ethical approval from the KEPK Poltekkes Palu Ministry of Health.

III. RESULT

Table 1. Distribution of maternal frequency based on age, education and occupation in the working area of the Pantoloan Health Center

Characteristic	F	%
Age		
<20 years old	2	6,26
20-35 years old	23	71,87
>35 years old	7	21,87
Total	32	
Education		
No Education	1	3,12
Elementary School	6	18,76
Junior High School	13	40,62
High School	12	37,50
Total	32	100
Occupation		
Not Working	26	81,25
Self Employed	6	18,75
Total	32	100

Based on table 1, we can see the characteristics of respondents based on age, namely 2 (6.26%) respondents aged <20 years old, 23 (71.87%) respondents aged 20-35 years old, and 7 (21.87%) respondents aged >35 years old. The characteristics of respondents based on education are 1 (3.12%) respondents have no education, 6 (18.76%) respondents have elementary school education, 13 (40.62%) respondents have junior high school education and 12 (37.50%) respondents have high school education. Furthermore, the characteristics of respondents based on occupation were also illustrated, namely 26 (81.25%) respondents not working (IRT) and 6 (18.75%) respondents as self-employed.

Table 2. Frequency Distribution of Mothers' Knowledge about Responsive Feeding as an Effort to Prevent Stunting Before and After Counseling with Explotion Box in the Pantoloan Health Center Work Area.

Knowledge	Pre-Test		Post-Test	
	F	%	F	%
Well	1	3,12	27	84,38
Moderate	21	65,62	5	15,62
Less	10	31,26	0	0
Total	32	100,00	32	100,00

Based on table 2, it can be seen that the picture of respondents' knowledge before being given counseling about responsive feeding with explotion box media is 1 (3.12%) respondents who are well knowledged, 21 (65.62%) respondents who are moderate knowledgeable moderate, and 10 (31.26%) respondents who are less knowledgeable.

Table 3. The Effect of Counseling with Media Explotion Box on Mothers' Knowledge about Responsiveness in the Pantoloan Health Center Work Area

Knowledge	Pre-test			Post-test			N	P-Value
	F	%	Average	F	%	Averagae		
Less	10	31,26	59,94	0	0	84,75	10	
Moderate	21	65,62		5	15,62		26	<0,000
Well	1	3,12		27	84,32		28	
Total	32	100		32	100		64	

Based on table 3, it can be seen that maternal knowledge before being given counseling on responsive feeding as an effort to prevent stunting with explotion box media was obtained as many as 10 (31.26%) respondents with less knowledge, 21 (65.62%) respondents with moderate knowledge and as many as 1 (3.12%) respondents with well knowledge. Meanwhile, after counseling on responsive feeding with explotion box media, 5 (15.62%) respondents were moderate knowledgeable and as many as 27 (84.32%) respondents were well knowledged. The average amount of knowledge of respondents before counseling was 59.94 and the average knowledge of respondents after counseling was 84.75, so that the average score difference was 24.81. This result illustrates an increase in respondents' knowledge after being given counseling with explotion box media.

Based on the results of statistical tests, ρ-value = 0.000 (smaller than 0.05) was obtained so that the hypothesis of this study (Ho) was rejected or in other words there was an influence of counseling with explotion boxes about responsive feeding as an effort to prevent stunting in the Pantoloan Health Center Work Area.

IV. DISCUSSION

This study showed that before being given counseling using Explotion Box media, most respondents had sufficient knowledge. After counseling using the Explotion Box media, it was seen that there was an increase in knowledge where most respondents were well informed. The increase in respondents' knowledge shows that the information provided during counseling is conveyed well using media in the form of explotion boxes that are very unique and interesting, so that respondents are exposed to the information conveyed and the results have an influence on increasing respondents' knowledge.

From the results of the T-Test, it was concluded that there was an influence of counseling using explotion box media on increasing maternal knowledge about responsive feeding as an effort to prevent stunting in the Pantoloan Health Center Work Area. The use of explotion box media in providing information about responsive feeding as an effort to prevent stunting for ± 40 minutes has been proven to attract the attention and interest of mothers in listening to counseling. The high curiosity and curiosity of respondents caused them to focus more on listening to the material provided so that participants get a better understanding of responsive feeding as an effort to prevent stunting.

Promotive, preventive, curative, and rehabilitative efforts must be carried out by local governments and all communities to prevent and control stunting. One strategy to increase mothers' understanding of stunting prevention efforts is counseling, especially understanding of responsive feeding. A sufficient amount of information is necessary for the growth of one's thinking to make it easier for the individual to accept motivations that have consequences on attitudes and actions[12][13][14][15].

Counseling is one approach that can be used to increase mothers' understanding of efforts to avoid stunting. which states that. Counseling activities can increase knowledge, attitudes and motivation of mothers in preventing stunting in children. Increasing knowledge through health promotion cannot be separated from the media. The influence of educational or communication media used by informers has a positive impact on increasing one's knowledge. Through interesting media, health messages become easy to understand and the target can easily receive the message conveyed[13][14][15].

Counseling can be done in various ways, including through appropriate and interesting media. This Explotion Box is a visual graphic media made of cardboard, usually cube-shaped or hexagon-shaped. When the box is opened, pictures and writing will be displayed about responsive feeding materials such as understanding, as well as five principles of responsive feeding according to responsive feeding rules on each side. Counseling with this box media can draw the attention of mothers to the material provided[9][11].

Information provided by using an explotion box can be conveyed well, because information is conveyed in an interesting way with beautiful colors. This media provides information full of surprises, thus making counseling activities interesting and exposing respondents to information that is conveyed well so that it has a significant influence on increasing respondents' knowledge. Media explotion box is an innovation of the school literacy movement to cultivate virtuous literal personalities through reading that is uniquely packaged to attract attention while training and improving cognitive through reading, moral reasoning skills and student literacy[9][10][13].

Stunting prevention and control requires a multidisciplinary approach. One of the risk factors for stunting is poor food choices made by parents. Mothers have an important role in parenting by using a responsive feeding approach to feed children. Mothers need to be aware of the importance of responsive feeding in preventing all forms of malnutrition in children, including stunting, wasting, and obesity. Responsive toddler feeding seeks to increase children's food acceptance in order to increase their growth and development. Although responsive feeding is an indirect role, parenting mistakes in the long run will have a negative impact on children's growth and development[16][14][8][17][15][18][19].

Responsive feeding is an important step to get a good nutritional status of toddlers. Age appropriate feeding, encouraging the child to eat, responding to lack of appetite, feeding the child in a safe atmosphere, and engaging in pleasant interactions are the five principles governing a mother's ability to feed the child actively and responsively. Unresponsive feeding can lead to stressful mealtimes and overall family relationship difficulties. Improper and continuous feeding are some of the main causes of stunting, so it is important for a mother to increase her knowledge about responsive feeding as an effort to prevent stunting[20][21][22][23][24][17].

Based on the results of this study, the explotion box media is recommended to be used as a health promotion media because it has an effect in increasing public knowledge, especially mothers of infants aged 6-24 months about responsive feeding.

V. CONCLUSION

Based on the results of research and discussion, it can be concluded that there is an influence of counseling with explotion boxes on responsive feeding as an effort to prevent stunting on maternal knowledge in the Pantoloan Health Center Work Area.

CONFLICT OF INTEREST

No conflicts of interest have been declared

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The Relationship Between Social Support And Quality Of Life Of Cervix Cancer Patients Who Do Chemoradiating In Hospital

Ike Prafita Sari[1]

Abstract--- The main treatment for advanced cervical cancer is radiation or a combination of chemotherapy and radiation (chemoradiation). Side effects that can arise from radiation are fatigue, diarrhea, cystitis, skin discoloration, nausea, vomiting, and helplessness. It also affects the patient's psychological condition such as feeling useless and losing independence which results in a decrease in the patient's quality of life. The purpose of this study was to determine the relationship between social support and quality of life for cervical cancer patients undergoing chemoradiation at the hospital. The type of research used is the correlational analytic approach cross-sectional. The sample in this study was patients undergoing chemoradiation at the hospital totaling 30 respondents using a sampling technique simple random Sampling. Test analysissperman-rho test. Applymost of the respondents had a good social support category of 25 respondents (83.3%) and most of the respondents had quite good quality of life category of 23 respondents (76.7%). Test results using testSpearman's rho obtained a value of p <0.05, namely p = 0.012, which means that there is a relationship between social support and quality of life for cervical cancer patients who carry out chemoradiation at the hospital. Hospitals can provide consulting services for patients and families to provide psychological support and information about disease and treatment so that patients are more enthusiastic and confident they can improve their quality of life.

Keywords-- Social Support, Quality of Life, Cervical Cancer, and Chemoradiation

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I. INTRODUCTION

Cervical cancer is a malignancy that occurs in the cervix in the female reproductive organs, which is the entrance to the vagina, caused by most of the Human Papilloma Virus. The main treatment for advanced cervical cancer is radiation, or a combination of chemotherapy and radiation (chemoradiation) (Ariani S, 2015). Radiation can be carried out externally and internally and is the first choice in advanced cervical cancer because the spread of cancer cells has reached the parametrium so surgery cannot be performed (Brown A, 2016). Some of the side effects that can arise from radiation are fatigue, diarrhea, cystitis, skin discoloration, nausea, vomiting, and helplessness. It also affects the patient's psychological condition such as feeling useless and losing independence which results in a decrease in the patient's quality of life (Arends et al., 2018).

According to the World Health Organization (2018), almost all cases of cervical cancer (99%) are related to infection with HPV (Human Papillomaviruses), a very common virus transmitted through sexual contact. Cervical cancer is the fourth most common cancer in women. In 2018, an estimated 570,000 women were diagnosed with cervical cancer worldwide and around 311,000 women died from the disease. Data from GLOBOCAN (Global Cancer Observatory), (2020) stated that there were 36,633 (9.2%) new cases of cervical cancer in Indonesia. Based on data from the Ministry of Health of the Republic of Indonesia (2021), it is stated that the incidence of cancer in Indonesia ranks 8th in Southeast Asia, while in Asia it ranks 23rd. The incidence

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of cervical cancer in Indonesia is 23.4 per 100,000 population with an average death rate of 13.9 per 100,000 population. In East Java Province in 2019 there were 192,169 (3.07%) women who carried out early detection of cervical cancer of the entire target of 6,269,280 women and positive VIA of 9,494 (4.94%) women.

The results of the survey while the number of cervical cancer patients in Malang City Hospital who are undergoing inpatient and outpatient care in 2020 is 30.73% or 716 cases per year. (Malang Hospital, 2020). In November 2021, there were 110 cases and from January to December 2022 there were 1200 (Malang Hospital, 2022)

Various efforts to treat cancer continue to be developed. Currently, cancer treatment is carried out through surgical removal of tissue, chemoradiation, and/or chemotherapy (Nurjanah, 2016). Research conducted by Iskandar M, et al stated that chemoradiation had a higher response to HPV than radiation. Many cancer survivors face psychosocial and physical problems during and after cancer treatment, such as fatigue, increased risk of distress, and decreased physical activity and physical function. This also affects the psychological condition of the patient such as feeling less useful and losing independence which results in a decrease in the quality of life (Sloan, 2016).

Treatments that can be performed on cancer patients include surgery, radiotherapy, and chemotherapy. Chemotherapy is the administration of drugs to kill cancer cells. Cancer patients undergoing chemoradiation programs may experience various physical problems including anemia, thrombocytopenia, leukopenia, nausea, vomiting, alopecia, stomatitis, and allergic and neurotoxic reactions. Cancer patients not only experience various physical problems but also experience psychological disorders that can affect the patient's quality of life, the psychological impact of morphology includes: helplessness, anxiety, shame, self-esteem, stress, depression, and anger. Clinically Chemoradiation is successful if the patient's general condition is good, feels comfortable, has no complaints and the patient's quality of life is getting better so that if the patient does not receive chemotherapy regularly it will affect the patient's quality of life (Diananda, 2017).

Several studies on the quality of life of cervical cancer patients stated that there was a decrease in the quality of life in patients with cervical cancer. Perwitasari (2019), states that the overall quality of life of patients has decreased after chemotherapy. Murtiwi (2020) states that there is a relationship between cancer stage, work, and family support on the quality of life of patients with cervical cancer. Improving the quality of life of cancer patients during treatment will increase their adherence to care and treatment and give them the strength to deal with various symptoms or complaints that arise. experienced by cancer patients. Efforts to improve the quality of life of cancer patients are by strengthening support from the family and social side (Irawan et al., 2017).

Social support is known to strengthen the personal and social abilities of cervical cancer patients to overcome their psychological difficulties, especially during the adaptation process after being diagnosed with cancer and undergoing treatment. Social support can come from various sources, such as family, friends, neighbors, spouses, and even health workers. On social support, the indicators measured include emotional support, appreciation, instrumental, informational, and social networks. Someone who gets family support and social support feels cared for, loved, feels valuable, can share burdens, is confident and fosters hope so that they can ward off or reduce stress (Reamer, 2017).

Efforts to improve the quality of life of patients by providing education given to patients and families so that families always provide social support to patients by always accompanying patients when carrying out treatment and patients playing an active and disciplined role in the treatment process being undertaken. Mutual support between the family and the patient will motivate the patient to recover and this will affect the patient's quality of life (Arends et al, 2018).

Therefore, researchers are interested in raising a study entitled "Relationship of Social Support with Quality of Life of Cervical Cancer Patients Who Undergo Chemoradiation at Malang Hospital" whose aim is to determine whether there is a relationship between social support and quality of life of cervical cancer patients.

II. METHOD

The type of research used in this research is a correlational analytic approach cross-sectional. All elective surgery activities are carried out at Malang Hospital. The sampling technique uses technique random sampling. The sample is 30 respondents.

This study used a measuring instrument questionnaire. Statistical test calculation using testSpearman's rho. This research has gone through an ethical test at KEPK Stikes Majapahit Mojokerto.

III. RESULT

Table 1 Frequency Distribution of Respondents Based on General Data at Lavalette Malang Hospital

	Category	Frequency	Percentage
Age	20-40 years	15	50.0
	41-50 years	9	30.0
	51-60 years	6	20.0
Education	SD	2	6.7
	Junior High School	10	33.3
	SMA	18	60.0
Work	IRT	20	66.7
	Self-employed	10	33.3
Marital status	Marry	24	80.0
	Divorced	6	20.0
Long Sick	<1 year	22	73.3
	>1 year	8	26.7
Accompanying Family	Husband	24	80.0
	Child	4	13.3
	parent	2	6.7

Table 2. Frequency Distribution Based on Special Data at Malang Hospital.

	Category	Frequency	Percentage
Social Support	Good	25	83.3
	Enough	5	16.7
	Less	0	0
Quality of Life	Good	5	16.7
	Enough	23	76.7
	less	2	6.7

Cross table 3 between social support and quality of life of respondents who carry out chemoradiation at Malang Hospital.

Social support	Quality of life			Total
	Good	Enough	Less	
Good	5	20	0	25
	16.7%	66.7%	.0%	83.3%
Enough	0	3	2	5
	.0%	10.0%	6.7%	16.7%
Less	0	0	0	0
	.0%	.0%	.0%	.0%
Total	5	23	2	30
	16.7%	76.7%	6.7%	100.0%
Correlation Coefficient		0.455[*]		
Say. (2-tailed)		0.012		

Table 1 shows that half of the respondents who underwent chemoradiation at Malang Hospital were aged 30-40 years as

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many as 15 respondents (50%). Most of the respondents who did chemoradiation at Malang Hospital had high school level education, 18 respondents (60%). Most of the respondents who did chemoradiation at Malang Hospital had jobs as housewives with 20 respondents (66.7%). most of the respondents who did chemoradiation at Malang Hospital had marital status in the category of married as many as 24 respondents (80%). most of the respondents who did chemoradiation at Malang Hospital had a length of illness of <1 year as many as 22 respondents (73.3%). And most of the respondents who did chemoradiation at Malang Hospital had sick companions, namely husbands, as many as 24 respondents (80%).

Based on Table 2, it was found that most of the respondents who carried out chemoradiation at Malang Hospital had good social support in the category of 25 respondents (83.3%). And most of the respondents who did chemoradiation at Malang Hospital had a pretty good quality of life category of 23 respondents (76.7%)

Based on the cross table, it was found that most of the respondents who carried out chemoradiation at Malang Hospital had good social support, and had a pretty good quality of life category, as many as 20 respondents (66.7%). From the test results using the testSpearman's rho the value of p <0.05, namely p = 0.012, which means that there is a relationship between social support and the quality of life of cervical cancer patients undergoing chemoradiation at Malang Hospital. The results showCorrelation Coefficient of (+0.455) which indicates that there is a moderate relationship between social support and the quality of life of cervical cancer patients undergoing chemoradiation at Malang Hospital

IV. DISCUSSION

1. Social Support for Cervical Cancer Patients Who Undergo Chemoradiation at Malang Hospital

Based on the results of the identification of social support, it was found that most of the respondents who carried out chemoradiation at Malang Hospital had good social support in the category of 25 respondents (83.3%).

Social support is known to strengthen the personal and social abilities of cervical cancer patients to overcome their psychological difficulties, especially during the adaptation process after being diagnosed with cancer and undergoing treatment. Social support can come from various sources, such as family, friends, neighbors, spouses, and even health workers. On social support, the indicators measured include emotional support, appreciation, instrumental, informational, and social networks. Someone who gets family support and social support feels cared for, loved, feels valuable, can share burdens, is confident and fosters hope so that they can ward off or reduce stress (Ahyani et al, 2017).

Social support is a resource that provides physical and psychological comfort obtained through the knowledge that the cancer patient is loved, cared for, and valued by others and he is also a member of a group based on common interests (King, 2017). The social support obtained has benefits for the individual. This is because social support can make individuals realize that there are people who care, appreciate, and love them. (Usta, 2018).

Researchers argue that patients who are given good social support will have an impact on the patient's self-confidence and psychology so that they remain enthusiastic about undergoing a treatment that is being carried out. The people around him provide support so that the person concerned feels loved so that he can overcome his problems with greater confidence. In this study, the social support provided came from husband support by 24 respondents (80%), social support for children by 4 respondents (13.3%), and social support from parents by 2 respondents (6.7%). Good support will have a psychological impact on sufferers. Good social support will motivate a person to take treatment (Lee David et al, 2017). Social support is very important to understand because social support becomes very valuable when individuals experience a problem, therefore the individual concerned needs the closest people who can be trusted to help overcome these problems. Social support plays an important role in human development. For example, people who have good relations with other people, then that person has good mental and physical well-being, high subjective well-being, and low morbidity and mortality rates.

Respondents also obtained quite good social support due to a lack of appreciation from family, and nurses in the form of praise and motivation to clients in undergoing treatment so that clients feel a decrease in motivation and enthusiasm in carrying out care. Social support is very important because social support received by individuals does not prolong the life of people with serious illnesses, but it often reduces the suffering and pain of sufferers.

2. Quality of Life of Cervical Cancer Patients Undergoing Chemoradiation at Malang Hospital

Based on the results of identifying the quality of life, it was found that most of the respondents who underwent

chemoradiation at Malang Hospital had a fairly good quality of life, as many as 23 respondents (76.7%).

The main treatment for advanced cervical cancer is radiation or a combination of chemotherapy and radiation (chemoradiation). Radiation can be done externally and internally and is the first choice in advanced cervical cancer because the spread of cancer cells has reached the parametrium so surgery cannot be performed. Some of the side effects that can arise from radiation are fatigue, diarrhea, cystitis, skin discoloration, nausea, vomiting, and helplessness. It also affects the patient's psychological condition such as feeling useless and losing independence which results in a decrease in the patient's quality of life (Arends et al., 2018).

Many cancer survivors face psychosocial and physical problems during and after cancer treatment, such as fatigue, increased risk of distress, and decreased physical activity and physical function (Firdaus et al, 2018). This also affects the psychological condition of the patient such as feeling less useful and losing independence which results in a decrease in the quality of life (Sloan, 2016). In this study, it was found that half of the respondents who underwent chemoradiation at Malang Hospital were aged 30-40 years, as many as 15 respondents (50%). Many experts say that productive age is very vulnerable to a decrease in self-image due to physical conditions experienced, this will result in a decrease in self-esteem and result in a sufferer's quality of life (Hidayat A, 2015).

Researchers argue that the quality of life of respondents in this study is in a fairly good category because respondents are still adapting to physical changes such as nausea, vomiting, skin that starts to turn black, neutropenia, diarrhea, and hand-foot syndrome. The results showed that most of the respondents who did chemoradiation at Malang Hospital had a length of illness of <1 year as many as 22 respondents (73.3%). The longer a person suffers from a disease, especially cancer, the lower the quality of life due to the patient's helplessness towards the patient's illness and emotional responses, so they need support from their closest family and the surrounding environment. The situation felt by the respondents caused the respondents to feel anxious, afraid, and prolonged stress, the respondents were able to accept this condition and were able to carry out their activities, some respondents said that the disease prevented the respondents from working. Respondents who still have a job must reduce their activities according to their abilities, respondents can concentrate on a job and can carry out social activities around the respondent house, while respondents who do not work are still able to coordinate their bodies to carry out social activities such as working together, independent activities and exercising around the house (Indriani et al, 2016). In this study, most of the respondents who carried out chemoradiation at Malang Hospital had jobs as housewives with 20 respondents (66.7%).

3. Relationship between social support and quality of life for cervical cancer patients undergoing chemoradiation at Lavalette Hospital in Malang

From the test results using the testSpearman's rho the value of p <0.05, namely p = 0.012, which means that there is a relationship between social support and the quality of life of cervical cancer patients undergoing chemoradiation at Malang Hospital. The results showCorrelation Coefficient of (+0.455) which indicates that there is a moderate relationship between social support and the quality of life of cervical cancer patients undergoing chemoradiation at Malang Hospital.

Several studies on the quality of life of cervical cancer patients stated that there was a decrease in the quality of life in patients with cervical cancer. Perwitasari (2019), states that the overall quality of life of patients has decreased after chemotherapy. Murtiwi (2020) states that there is a relationship between cancer stage, work, and family support on the quality of life of patients with cervical cancer. Improving the quality of life of cancer patients during treatment will increase their adherence to care and treatment and give them the strength to overcome various symptoms or complaints experienced by cancer patients. Efforts to improve the quality of life of cancer patients are by strengthening support from the family and social side (Irawan et al., 2017). In this study, the social support provided came from husband support by 24 respondents (80%), social support for children by 4 respondents (13.3%), and social support from parents by 2 respondents (6.7%). Good support will have a psychological impact on sufferers. Good social support will motivate a person to take treatment (Amylia et al, 2016).

Positive support obtained by respondents at an advanced stage is in the form of instrument support such as helping with homework, helping with patient activities that the patient is unable to carry out, helping to meet the patient's basic needs such

as feeding, bathing and preparing clothes besides that the family helps prepare food according to the patient's diet (Apollo et al, 2017). Respondents who experience nausea and vomiting due to chemotherapy also receive special attention from the family such as preparing a variety of foods to reduce nausea and vomiting and maintain the condition of the client's skin, because the client experiences skin changes such as dark discoloration of the skin and nails. The social support obtained has an impact on improving the quality of life. This statement is supported by research by Oetami et al (2017) which said 58% of patients with stage III and IV cancer were able to improve their quality of life due to the family support they received. This is based on the belief that the involvement of those closest to them will help improve the quality of life of cancer patients.

Researchers argue that social support received by individuals does not extend the life of people with serious illnesses, but it often reduces the suffering and pain of sufferers, this is because family support can increase self-confidence and improve the health status of sufferers. This statement is supported by research results (Rokhmatika & Darminto, 2018) which reported that social support provided by families and friends of people with cancer who were diagnosed resulted in positive support thereby improving the general health of cancer patients.

V. CONCLUSION

The results of the test found that there was a relationship between social support and quality of life for cervical cancer patients who underwent chemoradiation at Malang Hospital. It is recommended for hospital agencies to provide consulting services for patients and their families so that they can know more about the disease and treatment that will be carried out by the patient so that the patient feels more motivated to take treatment and this will have an impact on the patient's quality of life. And it should be able to improve services to patients undergoing chemoradiation so that patients are given more attention and this greatly affects the patient's quality of life.

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The Effect Of Education Through Story Books With Picture On Covid-19 Prevention Behavior In Elementary School Students

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Abstract--- *Poor COVID-19 prevention behavior can have a negative impact during a pandemic, especially behavior in elementary school students. Health promotion efforts need to be continued by delivering education to schools. Education media that suitable for school-age children is through story books with picture. The aim of this study was to determine the effect of education through story books with picture on COVID-19 prevention behavior in elementary school students. Quasi-Experimental Research with a One-Group Pretest-Posttest design with a sample of 56 respondents. Samples were taken using the total sampling technique with the exclusion criteria of students who did not take part in the activities from the start of the research. The data analysis used Wilcoxon test. It was found that 12 students (21.4%) had COVID-19 prevention behavior in the good category, 29 students (51.8%) in the sufficient category and 15 students (26.8%) in the less category at the pretest. It was found that 40 students (71.4%) in the good category, 13 students (23.3%) in the sufficient category and 3 students (5.4%) in the less category at the posttest. The results of the Wilcoxon analysis obtained p=0.000 (p<0.05), which means that there was a significant effect of the story book on the behavior of preventing COVID-19. The media of picture books has an effect on the behavior of preventing COVID-19 in elementary school students and it is hoped can be applied to elementary schools to improve the prevention of transmission of COVID-19.*

Keywords-- *Education; story books with picture; COVID-19 prevention behavior; elementary students*

I. INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a new type of disease that attacks the respiratory tract and can be transmitted (Santi and Indarjo, 2022). This disease is caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Coronavirus-2) and can attack all people, including children. COVID-19 is very dangerous and can cause a high potential for death, so it must be handled quickly and appropriately (Yanti et al., 2021). Symptoms that appear are fever, fatigue, dry cough, cough, shortness of breath, sore throat, chest pain. On March 13 2020, WHO stated that COVID-19 had spread to 114 countries. In Indonesia, the number of exposed to COVID-19 as of November 14 2022 reached 6,565,912 indicating the confirmed category, 6,356,794 indicating the recovered category, 159,158 indicating the death category. The entry of COVID-19 in the Special Region of Yogyakarta (DIY) Province in early March 2020 (Kesehatan, 2022).

National region case data with the cumulative number of COVID-19 in the 42nd week of Yogyakarta City, DIY Province and National. The National Region shows that the category of confirmed COVID-19 reached 6,469,276, the category recovered was 6,291,941 and the category died was 158,416. In the Province of the Special Region of Yogyakarta, there were 225,448

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confirmed cases of COVID-19, 218,681 cured categories and 5,954 dead categories. The city of Yogyakarta shows the category of confirmed COVID-19 reaching 35,263, the category of recovered 33,989 and the category of 1,168 died. On November 14, 2022 cases of COVID-19 in school-age children in the Special Province of Yogyakarta reached 33,726 confirmed cases, the Sleman district area reached 10,527 confirmed (Dinas Kesehatan DIY, 2022).

According to UNESCO, the basic concept of learning for school-age children is a learning process that prioritizes learning to know, learning to do, learning to be and learning to live together. Providing information especially about health to children is an effort to increase knowledge in maintaining their health and others. Currently, the health education media used are conventional, such as leaflets, booklets, power points, videos and picture story books (Aisah, Ismail and Margawati, 2021). Picture story books present stories made into books and pictures to illustrate interrelated stories. In addition, this media has the advantage of visualization effects that can stimulate the eye to see images and understand the text in the images, packaged in an attractive way and motivate children to follow the contents of the book. So it is hoped that children will more easily understand the information available and be able to describe the contents in picture story books (Sapri, Muhaini and Zunidar, 2021). With high understanding of information about COVID-19 in children can influence prevention behavior.

Poor COVID-19 prevention behavior will have a negative impact during the pandemic, especially behavior in elementary school students. Therefore it is necessary to carry out health promotion efforts by delivering education through the medium of picture story books. So that there is a need for education so that this case does not escalate, one way is by using the picture story book method which is adapted to the characteristics of the respondents. The factors that influence behavior are driving factors, enabling factors and supporting factors. Supporting factors include age, education and knowledge. Enabling factors include facilities and infrastructure while supporting factors include family and community (Adi and Indarjo, 2022). A person's behavior occurs through a sequential process. Before someone has a new behavior, actually within that person there is a sequential process with awareness, interest, consideration, try and adoption (Suparlan, 2021).

Researchers conducted a preliminary study at Nanggulan Elementary School on October 25, 2022. Based on the data obtained, there were 2 classes of students in grade IV, namely classes A and B, each with 28 students. Children are still adjusting the habits that are carried out during online learning activities so that they are still being adjusted during offline learning activities. Researchers conducted interviews with 5 grade IV students and said that the COVID-19 pandemic was over, and they were seen not wearing masks, playing freely in the field regardless of distance, not washing their hands when going to activities and after activities. Nanggulan Elementary School has provided facilities to prevent the transmission of COVID-19 such as the availability of 3 units of hand washing stations, there are posts urging people to keep their distance, wear masks but it seems that they are starting to go unnoticed on the grounds that children think this pandemic is over and lack of education from parents. The aim of this study was to determine the effect of education through story books with picture on COVID-19 prevention behavior in elementary school students of Nanggulan Elementary School.

II. METHOD

The research design is quantitative with the Quasi Experiment method with the One-Group Pretest-Posttest Design which is carried out once before and after the treatment. This research was conducted at Nanggulan Elementary School, Maguwoharjo-Yogyakarta on Februari 2023.

The variables used in this study are the independent variable and the dependent variable. The independent variable in this study is education through picture story books while the dependent variable is the behavior of preventing COVID-19. The population and sample in this study were 56 grade IV students using total sampling which was limited to the following exclusion criteria:

Grade IV students who did not take part in the activity from the start were carried out in the research

Grade IV students who are undergoing health care at the hospital/puskesmas (sick at the time of the study)

Grade IV students who were not cooperative during the research

The instruments used in this study are as follows:

Educational instrument through the media of picture story books. The picture story books used for research adopted from previous research conducted by Saleh (2021). The book discusses the meaning of COVID-19, ways of transmission, behavior to prevent COVID-19, prevention of COVID-19. This picture story book has 13 pages with a mix of pictures and writing. This picture story book was printed using A4 size HVS paper.

Instrument for prevention of COVID-19 behavior

The COVID-19 prevention behavior instrument uses a questionnaire. The questionnaire in this study contains statements related to the behavior of preventing COVID-19 in elementary school children. This questionnaire contains 17 statement items that are measured using the Guttman scale, with answers "yes" and "no" by giving ($\sqrt{}$) on the questionnaire sheet which is considered correct with good, sufficient and lacking categories (Lestari and Zulmiyetri, 2019):

Good, if you answer questions correctly $\geq$13 with a percentage of 76% - 100%

Enough, if you answer the questions correctly 10-12 with a percentage of 56% - 75%

Less, if the correct answer is $\leq$ 9 with a percentage of <56%.

Table 1. COVID-19 Prevention Behavior Questionnaire Grid

No.	Behavioral Aspect	Item Statement		Total
		Favorable	*Unfavorable*	
1.	Using Mask	1, 2, 3, 4	5, 6	6 item
2.	Ethics for coughing and sneezing	7, 8, 9		3 item
3.	Washing hands	11, 12, 13	10	4 item
4.	PHBS	14, 15, 16, 17		4 item
	Total	14 item	3 item	17 item

The questionnaire used in this study was tested for validity and reliability by researchers on 30 fourth grade students at Ringinsari Elementary School, Maguwoharjo with 25 statements, 8 invalid statement items were obtained (r count <r table) located in statement items 3, 4, 16, 17, 18, 23, 24, 25 so that the statement is omitted. Of the 17 statements with r count 0.366-0.798 and r table 0.361 it shows that r count > r table, then the item statement is declared valid. Reliability results using SPSS 26.0 obtained a Cronbach Alpha value of 0.667 or more than 0.6, so the questionnaire was declared reliable and could be used as a data collection instrument.

Before carrying out the data analysis test, a normality test is first carried out to find out whether the data distribution is normal or not. After the normality test was carried out on the pretest and posttest data, it was found that the p-value was <0.05, so the value was stated to be not normally distributed. Once it is known that the data is not normally distributed, the Wilcoxon test is performed which is a non-parametric test as an alternative test to the paired t-test. Obtained a p-value of 0.001 <0.05, so there is an effect of education through picture story books on the behavior of preventing COVID-19 in class IV students of Nanggulan Elementary School. Data processing in this study was carried out by researchers using SPSS 26.0.

The study has received an ethical clearance test at The Research Ethics Commission of 'Aisyiyah University of Yogyakarta on February 14 2023 with number 64/FIKES-NAP/I/2023.

III. RESULT

Table 2. Characteristics of Respondents

Characteristics of Respondents		Frequency (f)	Percentage (%)
Age	9 years old	6	10,7
	10 years old	6	10,7
	11 years old	44	78,6
Gender	Male	27	48,2
	Female	29	51,8
Jumlah Total		56	100

Based on table 2. it can be seen that the ages of the students in this study were different. There are 44 students (78.6%) aged 11 years, students aged 10 years as many as 6 students (10.7%) and students aged 9 years as many as 6 students (10.7%). Beside that, it can be seen that the most gender who participated in this study were women with a total of 29 students (51.8%), while men were 27 students (48.2%).

Table 3. Pretest Posttest Results for the Category of COVID-19 Prevention Behavior

COVID-19 Prevention Behavior	Pretest		Posttest	
	F	%	F	%
Good	12	21,4	40	71,4
Enough	29	51,8	13	23,2
Less	15	26,8	3	5,4
Total	56	100	56	100

Table 4. Pretest Posttest Questionnaire Results for COVID-19 Prevention Behavior (n=56)

No	Behavioral Aspect Covid-19 prevention	COVID-19 Prevention Behavior Statement	Score		
			Pretest	Posttest	Difference
1.	Wear a mask	I go to school wearing a mask correctly	42	54	12
		I use a mask by covering my mouth, nose and chin	41	50	9
		I wash my hands with soap after removing the mask	24	35	11
		I change the mask every 4 hours	5	8	3
		I take off my mask when talking to friends	28	42	14
		I put the mask anywhere after using it	38	45	7
2.	Ethics for coughing and sneezing	When I cough/sneeze, I still wear a mask	40	48	8
		When I cough/sneeze, I cover my mouth and nose with a tissue	17	24	7
		When I cough/sneeze, I cover my mouth and nose with my hand inside my elbow	42	48	6
3.	Washing hands	I wash my hands 6 steps under running water	27	22	5
		I wash my hands 6 steps with running water and soap or use a hand sanitizer.	38	41	3
		After washing my hands, I avoid touching the face, eyes, mouth and nose area	18	42	24
		I wash my hands after coughing/sneezing	34	37	3
4.	PHBS	I change clothes after school	56	56	0
		I eat nutritious food	52	56	4
		I exercise 3x a week for 30 minutes	10	13	3
		When I feel sick, I don't go to school	45	47	2

Table 5. Normality Test Results

Variabel	P Value	Description
Pretest	0,001	Not normal
Posttest	0,001	Not normal

Based on table 5, it can be seen that the p value in the pretest data is 0.001 and the posttest is 0.001, it is stated that the

data is not normally distributed (p value <0.05). Because the data on these two variables are not normally distributed, the data analysis test used is the non-parametric test, namely the Wilcoxon test.

Table 6. Wilcoxon Test Results

Variabel	N	Mean	P value
Pretest	56	10,63	0,001
Posttest	56	13,02	
Selisih		2,39	

Source: Primary Data, 2023

Based on table 6 it can be seen that the Wilcoxon test results obtained a significance value of 0.001 less than 0.05 (p <0.05) then Ho was rejected and Ha was accepted.

IV. DISCUSSION

The results of the study in table 3 show that before the intervention was given there were 12 respondents (21.4%) in the good category, 29 respondents (51.8%) in the sufficient category and 15 respondents (26.8%) in the less category. This shows that from the good category there are 12 respondents and the sufficient category is 29 respondents who have good knowledge in preventing COVID-19. However, respondents had not carried out all of the statement items on prevention of COVID-19 behavior in terms of wearing masks, coughing and sneezing ethics, hand washing and PHBS.

The results of the study are in table 4 In the aspect of wearing a mask, the results of the pretest were 5 respondents, the results of the posttest were 8 respondents and the difference in results was 3 respondents who changed masks every 4 hours. This shows that respondents still have insufficient knowledge in preventing COVID-19 and are supported by parents who say that in order to be more economical, masks are not replaced for one day. In line with (Pebriani et al., 2022) that adherence to the use of masks is 50.5% while non-adherence is 49.5%. However, community disobedience was caused by 96.9% of the public never changing their masks every 4 hours. This is due to influencing factors such as attitude, availability of masks at home and support of health workers with adherence to wearing masks.

This is in line with research results (Utami et al., 2020) that the need to increase knowledge in preventing COVID-19 by knowing the correct use of masks, the benefits of wearing masks, washing hands with running water and soap, and increasing immunity by exercising regularly . This shows that good knowledge is not always followed by good behavior, but good behavior is certain because someone has good knowledge. Therefore, it is very important to grow knowledge in preventing COVID-19 so that good behavior is formed. Supported by research conducted by (Setyawati, Utami and Ariendha, 2020) that there was a relationship between education level and behavior for preventing COVID-19 because the knowledge one acquires can generate motivation and intention to act in the form of behavior. Behavior in using the right mask by ensuring the mask covers the mouth and nose, if the mask used is damp you should replace it with a new mask, and use disposable masks or medical masks (Suprapto et al., 2020).

According to (Suryani, 2018) a person's behavior is influenced by heredity, environment and knowledge. When someone gets information and believes in the information received, the knowledge they have will form a positive attitude so that they are able to carry out COVID-19 prevention. In addition to getting information, one of the factors that influence a person's behavior in the school environment is the lack of the teacher's role in providing health services to teach how to implement clean and healthy living behaviors. The results of the study are in Table 4 Regarding the ethical statement aspect of coughing and sneezing, the results of the pretest were 17 respondents, the results of the posttest were 24 respondents and the difference in results was 7 respondents who when coughing or sneezing covered their nose and mouth with a tissue. In research conducted by (Alhidayati, Widodo and Mariana, 2022) that before being given cough and sneeze ethics counseling, the respondents did not know how to cough and sneeze ethics properly and after coughing or sneezing they did not wash their hands. In contrast to research conducted by (Moudy and Syakurah, 2020) that covered the nose and mouth using a tissue (77.4%), but more than half of the respondents answered correctly that after using a tissue, the tissue was immediately thrown into the trash (69.4 %). This is due to the influence

of knowledge on the causes, transmission and prevention of COVID-19 to implement preventive measures (Utami et al., 2020).

The results of the study are in table 4 in the aspect of the statement of hand washing, the results of the pretest were obtained by 34 respondents, the results of the posttest were 37 respondents and the difference in results was 3 respondents who washed their hands after coughing and sneezing in line with research conducted by (Alhidayati, Widodo and Mariana, 2022) that after coughing or sneezing do not wash the hands. Handwashing with soap (CPTS) was carried out in four activities, namely before eating, after defecating, after coughing or sneezing and washing hands after playing with friends. Children often ignore this preventive behavior due to a lack of understanding about health (Khushartanti and Roro, 2019). According to (Ahmad, Nikmah and Putri, 2019) in his research explained that hand washing with soap (CPTS) is an act of sanitation using water and soap with the aim of breaking the spread of germs or viruses. Health education for school children can also support children in implementing good and correct hand washing behavior.

The results of the study are in table 4 in the aspect of the PHBS statement, 10 respondents obtained pretest results, 13 respondents posttest results and the difference in results was 3 respondents who exercised 3x a week for 30 minutes. In line with research conducted by (Setyarini, Sihombing and Sandriani, 2020) that exercise does not have to be strenuous but light exercise such as walking 3x a week can improve good sleep quality. With good quality sleep, it will affect a healthy body so that the body's immunity is good. This is one way to prevent the spread of COVID-19.

According to (Anggraeni et al., 2022) the PHBS program is a behavior that is carried out on the basis of awareness or willingness as a result of learning in the health sphere. The application of this PHBS makes individuals, groups, groups or communities independent and able to help in the health sector and play an active role in promoting shared health. PHBS can be applied to all community groups, one of which is school-age children. Judging from the development of children aged 7-11 years, namely at the concrete operational stage where individuals begin to think logically and systematically to be able to solve problems that are concrete in nature. Children in this phase experience a fairly high development in critical thinking, attitudes and actions. Children also have thoughts and imitate what is conveyed and seen from parents and those around them. To find out the development of children, it is necessary to guide them proportionally so that when children get the information obtained in terms of prevention behavior for COVID-19 they can follow it properly (Bujuri, 2018).

The picture story book media used to educate respondents is included in the category of visual aids which have the advantage of being able to stimulate the senses of sight and hearing in children to obtain information so that information about health is more widely accepted. In line with research conducted by (Hayati and Suparno, 2020) that picture story books are graphic media that can be used to convey information or messages to readers without realizing it because they present attractive and colorful images. The advantages of picture story books media can stimulate children's motivation to do something positive, increase cognitive abilities with the material presented to influence behavior in preventing COVID-19.

In accordance with research conducted by (Patimah et al., 2021) that preventing COVID-19 requires prevention that must be carried out by all levels of society. Prevention can be done in various ways, one of which is by providing education. The education carried out is the first step to shape behavior that can reduce the spread of COVID-19. From the research data it was found that there was a relationship between knowledge and behavior to prevent COVID-19 with the results showing that more than half of the respondents already had good knowledge, 77% and 67% of respondents had good behavior. From the results of statistical tests in this study, a p-value of 0.00 (> 0.05) was obtained, so it can be concluded that there is a significant relationship between the level of knowledge about COVID-19 and the behavior to prevent the spread of COVID-19. Supported by research conducted (Chandra, 2019) that picture story books can convey messages in two ways, namely through illustrations and pictures. Illustrations (pictures) and writing in picture story books are intended to convey messages or information to support expressing messages properly and strongly. This research is reinforced by research conducted by (Lestari, Utari and Iskandar, 2022) that in increasing students' knowledge about COVID-19 it is necessary to provide health education through learning media, one of which is puzzles. The results obtained were that there was an increase in the media value on COVID-19 prevention behavior carried out by elementary school students with a median value of 28.5 before being given education and 32 after being given

education. Then the results of statistical tests were obtained with a p-value of 0.000 (p-value (p-value <0.05) so it can be concluded that health education using puzzles is effective for knowledge, attitudes and behavior in preventing COVID-19 in students at Purbowinangun Kalasan Elementary School. According to research conducted by (Adila, Mardiani and Wijaya, 2021) that in increasing knowledge and attitudes to comply with health protocols in school-age children it is necessary to provide health education in the form of video media. The limitations of this study are that in this study the measurement of COVID-19 prevention behavior only used a questionnaire.

V. CONCLUSION

There was a significant effect of providing education through picture story books on the behavior of preventing COVID-19 in grade IV students of Nanggulan Elementary School with p value of 0.001 (p <0.05). Further researchers are advised to use the picture story book method and observe the behavior of preventing COVID-19 directly from respondents.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest in this study.

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The Development of Application for Learning to Use Combined Hormonal Contraceptive Pills

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Abstract--- Background: Unintended pregnancy is a significant global health issue. The strategy for decreasing the rate of unintended pregnancy is promoting family planning through education on contraceptive usage. Objectives: The purposes of this research were to develop an application for learning on the use of combined hormonal contraceptive pills and to examine the quality and learning satisfaction of the application. Method: The application was developed in four stages: 1) reviewing the evidence-based practice, 2) designing the structure and learning approaches, 3) developing the application, and 4) checking the accuracy by the consultants and experts. The quality and satisfaction of the application were tested through questionnaires. A total of 40 females, ages 20-40 years, were selected by convenience sampling, who needed contraception using combined hormonal contraceptive pills and had no experience of using combined hormonal contraceptive pills in the urban community of Phitsanulok, Thailand between January to April 2022. Results: Descriptive statistics were used. The research findings illustrated that the computer and information technology quality of the application for learning to use combined hormonal contraceptives pills based on the Android operating system was at a high level through the computer and information technology experts ($\bar{X}$= 4.00, S.D. = 0.31). The content quality of the application was also at a high level based on review by experts in family planning ($\bar{X}$= 4.10, S.D. = 0.36). The satisfaction of the sample for using the application was at a high level ($\bar{X}$= 4.33, S.D. = 0.52). Conclusion: The findings demonstrated that the development of the application for learning the use of the combined hormonal contraceptive pills is feasible to enhance effectiveness of contraceptive knowledge and use.

Keywords-- unintended pregnancy, combined hormonal contraceptives pills, application

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I. INTRODUCTION

Unintended pregnancy is an important public health issue in Thailand. An unintended pregnancy is defined as a pregnancy either unwanted and unplanned or a mistimed pregnancy. A mistimed pregnancy such as the pregnancy refers to when no children were desired and/or the pregnancy occurred earlier than desired (Yazdkhasti, Pourreza, Pirak, & Abdi, 2015). The incidence rate of unintended pregnancy is increasing worldwide especially in developing regions. Unintended pregnancy can negatively impact the health risks for the pregnant women. The offspring can have socioeconomic consequences such as malnutrition and violence. Statistics from thirty-six countries indicated that two-thirds of women who have sexual activity avoid using contraception due to worry about the side effects, concern about health conditions, and misunderstanding about contraception. (World Health Organization (WHO), 2019). The report from the United Nations Population Fund (UNFPA) found that nearly half of all global pregnancies, around 121 million per year, are unintended pregnancies (UNFPA, 2022). It illustrated the gaps in family planning that linked to the increase in the high rate of unintended. The strategy for decreasing the rate of unintended pregnancy is promoting preconception health as part of family planning in terms of incorrect use and

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contraceptive failure especially with the combined hormonal contraceptive pills (Centers for Disease Control and Prevention (CDC), 2021). A combined hormonal contraceptive pills (CHC) contains of two synthetic hormones such as estrogen and progesterone for preventing pregnancy (Faculty of Sexual & Reproductive Healthcare (FSRH), 2019).

In Thailand, the CHC is quite commonly used and relatively easy to get from pharmacy or drugstore without prescription. In addition, a dosage regimen for CHC is difference from another medicines in terms of starting, continuous taking, and follow up a side effect. The CHC is generally started in the first five day in the common menstruation period and take continuously at the same time every day for 21 or 28 days based on the type of CHC (WHO, 2016). The study of effects of drug reminder application and manual for improving adherence of oral contraceptive pills pointed out that women of reproductive age between 15-49 years old choose oral contraceptive because it is convenient use 68.8 percentages and easy to get 65.6 percentages. Surprising, the findings in this study indicated that the samples just correctly use oral contraceptive 53.6 percentages. They illustrated the problems as follow: incorrect take a pills in the first time and misused when missing a pills. Nearly one-tenth expressed that they don't know how to take it after missing or forgetting the pills. Most of them claimed that they know how to use oral contraceptive pills, but some women may misunderstand how to use it correctly (Kanjanasilp, Ploylearmsang, Rangseepanya, Donnak, & Robpiree, 2018). It is associated with the study of knowledge and attitude towards the use of combined hormonal contraceptive pills among reproductive Thai women. The study carried out that around two third (66 percentages) have had knowledge about the accurate using the pills less than half (50 percentages) of the questionnaire Sae-lim1, Maitreejon, Limpanon, & Jiratisorn, 2019. It indicated that women of reproductive age should learn correctly use about how to take oral contraceptive pills properly including starting date, missing pills, advantages, disadvantages, and side effects (Chuemongkon, Khunhom, & Dawdan, 2019).

The technology evolution has changed and transformed global healthcare as a healthcare innovation. It impacts on health behaviors and health promoting activities that has been linked to the internet as a globalization. From the statistics, trends of using internet in all age groups are dramatically increased during the period of 2017 to 2020. In 2020, the internet use as online users is particularly highest for population ages 15-24 years (98.4 percentages). Ages 25-34 years and 35-49 years actively use the internet around 97.3 and 90.6 percentages respectively. The internet using rate in everyday has 89.3 percentages, and once a week around 10 percentages. Almost all the online users use smartphone to access the internet (99.2 percentages) (National Statistical Office Thailand, 2021). It shows the impacts of technology involution has changed our lifestyle. The smartphone technology has been rapid developed, that means smartphones are more likely to access the internet and social media easily. Smartphone ownerships in Thailand is growing rapidly due to the cost and society in the digital era (Hincharoen, 2019).

Therefore, this study aims to develop the learning source as an application of learning to use the combined hormonal contraceptive pills for reproductive women. The concept of learning source was designed in terms of convenience, open accessibility, easily using, minimize the mistakes, providing time saving, and save cost including alert system. The advantages will enhance their knowledge, improve the correct using and reduce the mistakes or missing pills that might fills the gaps of family planning and reduces rate of unintended pregnancy. The objectives of this research study are to:

Develop the application for learning which focuses on the proper uses of combined hormonal contraceptives pills (CHC).

Evaluate the content and computer and information technology quality of the application on learning to use the combined hormonal contraceptives pills (CHC).
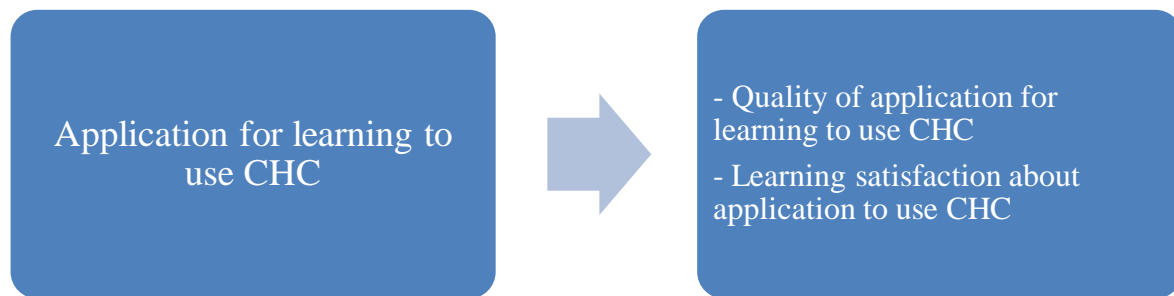
Assess the learning satisfaction of the application for learning to use combined hormonal contraceptives pills (CHC).

Research hypotheses

The content and computer and information technology quality of the application for learning to use combined hormonal contraceptives pills (CHC) will be at a high level.

The learning satisfaction about the application for learning to use combined hormonal contraceptives pills (CHC) will be at a high level.

Conceptual framework

II. METHOD

The research and development design were used to develop application for learning about how to use the combined hormonal contraceptive pills (CHC) and determine the quality in terms of content and computer and technology and learning satisfaction of the application. The population in this study is a reproductive women, who are a minimum of twenty years old who needed seek services to use combined hormonal contraceptive pills. A total of forty females, aged during twenty and forty years old, were selected by convenience sampling, which need contraception using combined hormonal contraceptive pills and had no experience of using combined hormonal contraceptive pills in urban community, Phitsanulok, Thailand. Women interested in participation were given full information by the researcher. The researcher took written consent. The participants were screened through inclusion and exclusion criteria. The inclusion criteria are woman who able to read, speak and understand the Thai language. Women use the smartphone or tablet and no complications would be eligible for recruitment. Women with any contraindications, complications or severe side effects during using combined hormonal contraceptive pills were excluded. This study was conducted at the Faculty of Nursing, Naresuan University, Thailand over four months during the period of first of January to the end of April 2022. Ethical approval for the study was obtained from the Naresuan University Institutional Review Board (IRB No. P3-0176/2564), Naresuan University, Thailand, dated on December 23, 2021 until December 23, 2022.

The application for learning to use combined hormonal contraceptives pills (CHC) was developed by the researcher team which include two researcher and three information technology (IT) support. All of the information technology (IT) supports have an experience about the developing the software and application on smartphone at least five years. The application was developed in four stages: 1) reviewing the evidence-based practice, 2) designing the structure and learning approaches such as writing the lay out of the application, making the story board, designing alphabet size and font, matching the contents and pictures, trying out the color of the application and 3) developing the application, and 4) checking accuracy by the consultants and experts. It consists of the five parts in Thai language based on Android operating system (See Picture 1). The first part contains the concept of combined hormonal contraceptives pills (CHC) that provides benefit and mechanism of action for contraception. The second part demonstrates how to use the combined hormonal contraceptives pills (CHC) in terms of efficacy and perfect use such as when miss the pills or take the pills late. The third part consists of the adverse effects and contraindications. The fourth part contains of the side effects and signs and symptoms that need to meet the healthcare professionals. The last part consists of the alert for the pills reminder. The application was used based on their time and satisfaction. The application was accuracy checked and tested by the three consultants, who is an expert in reproductive healthcare and contraception.
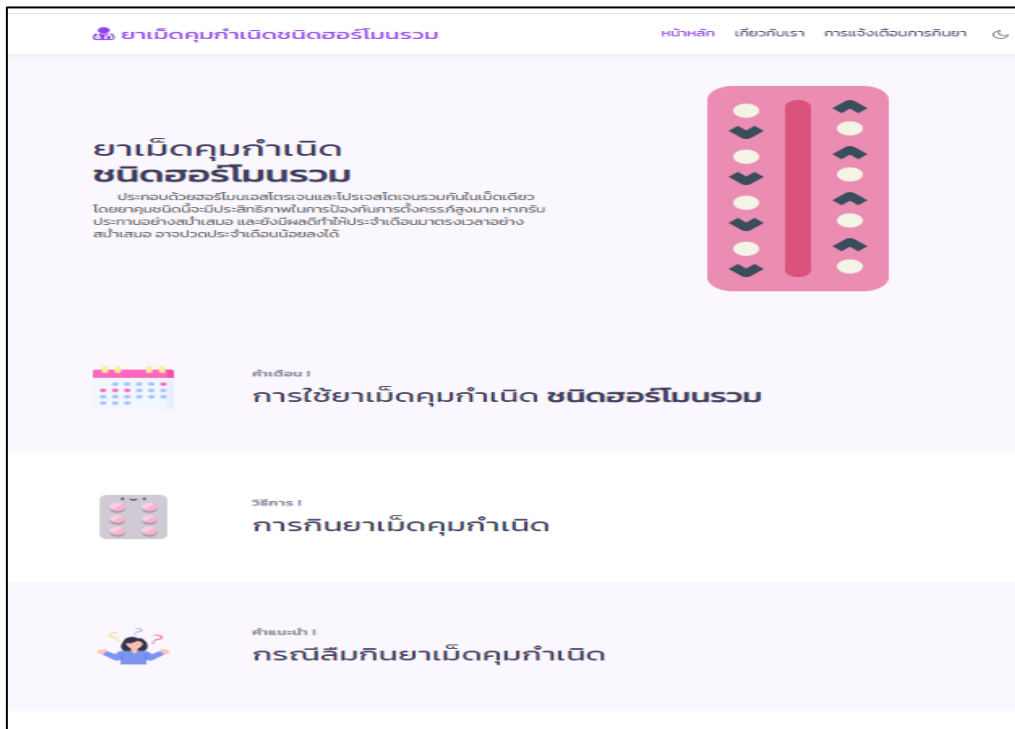
Picture 1: The application for learning to use combined hormonal contraceptives pills

The data were collected from women through the questionnaires which consists of the content evaluation, computer and information technology evaluation, and learning satisfaction of the course. The content, computer and information technology evaluation and learning satisfaction were designed as a rating scale from 0 to five score. The level of scale are follows: 0 was mean I really disagree with this item and 5 was mean I really agree with this item. The content quality evaluation questionnaire consisted of ten items that covered the content and language. The computer and information technology quality evaluation questionnaire consisted of thirteen items. It divided into four parts in terms of design of screen, picture, information system, and utility. The learning satisfaction questionnaires, which included fifteen items were tested the reliability with the thirty reproductive female aged between 20 and 40 years old through a Cronbach's Alpha Coefficient at 0.81. The content validity was proved through the three experts based on the index of concurrence (IOC) at 0.7-1.0 points. The learning satisfaction were collected from the samples after the using the application. The data collection process started with the first step that samples get the combined hormonal contraceptives pills (CHC) from pharmacy shop. Then, the samples contacted the researcher through phone or e-mail. Next, the researcher send the application via sample's smartphone. Then, the samples registered and logged in the application. After that, the samples learned how to use the CHC based on their time and satisfaction through the application until they finished the first pack of the combined hormonal contraceptives pills. The last step, the researcher send the learning satisfaction through google form around twenty minutes. The data were analysed by using SPSS for Windows. The data were reported as the descriptive: numbers, percentages, frequency, mean and standard deviation

III. RESULT

The content quality of the application were evaluated through three experts in reproductive healthcare and contraception who have an experiences with the reproductive women at least five years. All items average were high level ($\overline{X}$= 4.10, S.D. = 0.36). The item of appropriation and ordering the contents from easy to complicated contents was highest level ($\overline{X}$= 5, S.D. = 0). The lowest score which is item of language easy to understanding was moderate level ($\overline{X}$= 3.33, S.D. = 0.58) (Table 1)

Table 1: The content quality evaluation of the application for learning to use combined hormonal contraceptives pills

Item	Expert			x̄	S.D.	Level
	1	2	3			
1. Contents covers the objectives	4	5	4	4.33	0.58	High
2. Accuracy of contents	5	4	4	4.33	0.58	High
3. Appropriation and ordering the contents	5	5	5	5.00	0.00	Highest
4. Amount of contents are appropriate	4	4	3	3.67	0.58	High
5. Continuing the contents in each part	5	4	4	4.33	0.58	High
6. Language easy to understanding	4	3	3	3.33	0.58	Moderate
7. Accuracy of language	4	4	4	4.00	0.00	High
8. Contents according to picture	5	4	4	4.33	0.58	High
9. Appropriate between contents and pictures	4	4	4	4.00	0.00	High
10. Appropriation contents for users	4	4	3	3.67	0.58	High
Overall				**4.10**	**0.36**	**High**

The computer and information technology quality of the application were evaluated through three experts in computer and information technology who have an experiences with the software and application at least five years. All items average were high level ($\bar{X}$= 4.00, S.D. = 0.31). The overall of utility part was higher than information system, designing screen, and picture respectively ($\bar{X}$= 4.17, S.D. = 0.15). The item of alert of pills reminder was highest level ($\bar{X}$= 4.67, S.D. = 0.58). The lowest score which is item of picture sharpness was moderate level ($\bar{X}$= 3.33, S.D. = 0.58) (Table 2).

Table 2: The computer and information technology quality evaluation of the application for learning to use combined hormonal contraceptives pills

Item	Expert			x̄	S.D.	Level
	1	2	3			
1. Designing screen						
1.1 Appropriate and stylish	4	3	4	3.67	0.58	High
1.2 Accessibility	5	4	4	4.33	0.58	High
1.3 Attractive	4	3	4	3.67	0.58	High
Overall				**3.89**	**0.58**	**High**
2. Picture						
2.1 Sharpness	3	4	3	3.33	0.58	Moderate
2.2 Appropriation for interpretation	4	4	4	4.00	0.00	High
2.2 According to picture	4	4	4	4.00	0.00	High
Overall				**3.78**	**0.19**	**High**
3. Information system						

Item				$\bar{x}$	S.D.	Level
3.1 Convenience to use	5	4	5	4.67	0.58	Highest
3.2 Easy to search content	3	4	4	3.67	0.58	High
3.3 Appropriate about content bulk	4	4	4	4.00	0.00	High
Overall				**4.11**	**0.39**	**High**
4. Utility						
4.1 Alert for pills reminder	5	4	5	4.67	0.58	Highest
4.2 Download data speed	4	4	4	4.00	0.00	High
4.3 Imaged use	4	4	4	4.00	0.00	High
4.4 Accuracy ratio of picture for use	4	4	4	4.00	0.00	High
Overall				**4.17**	**0.15**	**High**
Overall				**4.00**	**0.31**	**High**

The samples were aged between 20 and 40 years. All of them used the smartphone. Women with any complications and contraindications, and severe side effects during using combined hormonal contraceptive pills. Some of them had minimal side effects during using combined pills such as nausea, vomiting, headache, and mood swing during their period. The overall of learning satisfactory after using the application was high ($\bar{X}$= 4.33, S.D. = 0.52). The satisfaction about the display speed of data and picture was highest ($\bar{X}$= 4.71, S.D. = 0.51). The satisfaction of the color on the application screen was lowest ($\bar{X}$= 3.78, S.D. = 0.51) (Table 3).

Table 3: The learning satisfaction of the application for learning to use combined hormonal contraceptives pills (n = 40)

Item	$\bar{x}$	S.D.	Level
1. Contents is interesting and attractive	4.21	0.44	High
2. Topics are clearly division	4.54	0.52	Highest
3. Contents order clearly and easy to understand	4.67	0.58	Highest
4. The amount of contents are appropriate	4.53	0.50	Highest
5. The introduction of contents is interesting and attractive	3.96	0.55	High
6. Color on the application screen is interesting	3.78	0.51	High
7. Font is appropriate and easy to read	4.22	0.61	High
8. Picture are attractive	3.84	0.52	High
9. Easy to accessibility	4.58	0.51	Highest
10. Speed of display the data and picture	4.71	0.51	Highest
11. Review the content by yourself and gain my understanding	4.54	0.48	Highest
12. Time for learning is appropriate	4.37	0.59	High
13. Appropriate between level of contents and users	4.05	0.49	High
14. Gain my knowledge about CHC after learning the application	4.45	0.48	High
15. Alert for pills reminder	4.63	0.50	Highest

	Overall		4.33	0.52		High

IV. DISCUSSION

The application for learning to use combined hormonal contraceptives pills (CHC) consists of the five parts in Thai language based on Android operating system. The first part contains the concept of combined hormonal contraceptives pills (CHC) that provides benefit and mechanism of action for contraception. The second part demonstrates how to use the combined hormonal contraceptives pills (CHC) in terms of efficacy and perfect use such as when miss the pills or take the pills late. The third part consists of the adverse effects and contraindications. The fourth part contains of the side effects and signs and symptoms that need to meet the healthcare professionals. The last part consists of the alert for the pills reminder. The development of the application was processed in four stages: 1) reviewing the evidence-based practice, 2) designing the structure and learning approaches, 3) developing the application, and 4) checking accuracy by the consultants and experts. This process will be useful for develop the application for client about healthcare promotion which linked to the globalization and global healthcare in terms of need, time, accessibility, and satisfaction (National Statistical Office Thailand, 2021).

The findings indicated the overall of content and computer and technology quality of the development of the application for learning to use combined hormonal contraceptives pills (CHC) were high. It may from the results of the application was developed through the researcher team that consisted of expert in maternal and newborn nursing and the informational technology. The application was checked accuracy with the expert in reproductive healthcare and contraception before testing. In addition, the application was developed step by step following the four processes based on the evidenced base and update information about CHC. This result is associated with the study of Rungrawiwan, Waedorkor, Malisuwan, & Churngchow (2021) about mobile application development for personnel management of the faculty of management science of Yala Rajabhat University. The application for personnel management was tested the efficacy that was high too (Rungrawiwan, Waedorkor, Malisuwan, & Churngchow, 2021). However, the application will be developed based on the global and technology changes as a globalization. In the future, the application will take place on smart watch, smart glasses, or other devices.

The overall of the learning satisfaction was high. The samples expressed their high satisfaction during learning and using the application as a valuable resource in terms of content, convenience, accessibility, and drug reminder. The content of combined hormonal contraceptives pills (CHC) meet their requirement, content reliability, and useful resource about how to effectively use the combined hormonal contraceptives pills. They can review and learn how to use it when they have a questions or hesitation. The application is convenience to use in terms of everywhere and every time based on their context or need. The accessibility can be adapt in their daily life because the application installed in the smartphone that enhance their day to day activities. The application was designed an update, use tone, color, and font that attractive for women including alert of pills reminder. It supported them to take pills in correct time and effective. The findings are related with the study of Boonchom, Khamdam, & Kreutong (2020) about the development of android application for disseminating Thai cultural heritage of the lower southern provinces of Thailand. This study found that the participants had high satisfaction in android application for disseminating Thai cultural heritage of the lower southern provinces of Thailand due to reliability of contents and useful information for travelling, work and study (Boonchom, Khamdam, & Kreutong, 2020). However, this findings has limit due to the small sample size. It might not generalize in other group of women. This application has limit use for Android operating system only. In the future, the application will be developed for other operating system such as IOS. The period of this study has limit after women completing the first pack of CHC. It might be take long time to follow the effectiveness and efficacy of using the application for learning including the user's satisfaction. In addition, the contents of contraception especially combined hormonal contraceptive pills (CHC) should be update and develop based on the globalization and evidence-based in terms of national and international level.

V. CONCLUSION

The finding demonstrated that the development of the application for learning to use combined hormonal contraceptive

pills is feasible to enhance effectiveness of contraceptive pills in reproductive women. The application was developed in four stages: 1) reviewing the evidence-based practice, 2) designing the structure and learning approaches, 3) developing the application, and 4) checking accuracy by the consultants and experts. The application based on smartphone gain knowledge and understanding about combined hormonal contraceptive pills that will support to decrease rate of unintended pregnancy worldwide including the developing country.

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Infants' Language Development Is Not Correlated with The Speech Stimulation Provided by Caregiver

Kristiani Desimina Tauho[1*], Rifatolistia Tampubolon[1], Destiana Yane Porsisa[1]

Abstract--- *The previous study showed that about 22,3% of children in Cebongan Primary Health Care were suspected of delay in language development. Speech delays furthermore impact children's difficulty developing social skills and building social relationships with the surrounding environment. Parents should pay attention to infant language and speech development by providing verbal stimulation earlier. This study aimed to confirm the relationship between parental speech stimulation and language development in infants aged 0-12 months. The method used was quantitative with a correlational type of research. This research was conducted from August to October 2021, involving 52 respondents accidentally. The instruments used were the Clinical Linguistic and Auditory Milestone Scale (CLAMS) questionnaire and a validated speech stimulation questionnaire in children. Rank spearman correlation test was used to analyze the data. The results showed that 88% of the children were in the normal status of language development, but a tenth was in a suspect category. Another one was in the mental retardation category. Regarding verbal stimulation, the highest, moderate, and lowest categories are 15%, 81%, and 4%. The Spearman's rho statistical test showed a significance (2-tailed) of 0.856, which is higher than > 0.05, meaning there was no significant relationship between verbal stimulation and infants' language development from 0-12 months. The factors that might influence abnormal language and speech in infants are disorders in language expressive and receptive. In summary, to provide stimulation for language development, caregivers must also consider the infant's ability to receive this stimulation.*

Keywords—Infant; language development disorder; parenting; stimulation

I. INTRODUCTION

Verbal development is a child's skills in reacting to sounds, carrying out orders given, and speaking politely to everyone [1]. If the child's verbal aspects do not develop properly, it can cause speech delay disorders and affect children's speech and social skills when they go to school. The effects on children who experience delays in speaking but are not appropriately handled can impact the mental condition of children who can be ridiculed, insulted, and humiliated to the point of experiencing stress [2]. This stress then results in the child's interactions with others around him/her.

Speech delays and language disorders show figures ranging from 2.3-19% in the United States in children aged 2-7 years in 2011. In 2022 it was reported that speech disorders in the United States are 8.4% in children aged 3-5 years and 8.1% in children aged 6-11 years [3]. Meanwhile, language development disorders in Australia were reported at 6.4% [4]. India, as a country in Asia, has a speech delay prevalence of 2.5% [5]. Nationally, in Indonesia, there are 2.3 – 19% of children aged 2 – 7 years' experience speech and language delays [6].

The results of research conducted at the Cebongan Salatiga Health Center found data on the language development of infants aged 0-12 months; as many as 22 babies experienced delays in language and speech. As many as 15 children aged 6-9

months could not follow the sound or word given, while seven children aged 8-10 months could say neither papa nor mama. It was stated that the delay in language development in infants in this study was caused by hereditary factors, parenting styles from parents, and environmental factors the child lived in [7].

The development of language and speech of each child is different. There are children whose language and speech development are following their developmental stages, and some are not [8]. This difference occurs because language and speech development in children is influenced by factors broadly divided into two, namely internal factors and external factors. Internal factors include race, ethnicity, family, age, gender, genetics, and chromosomal abnormalities. One of the postnatal external factors that can affect infant growth and development is parenting style [9]. In addition, several other risk factors for speech delay have been found in previous studies, namely a history of diseases such as seizures and pharyngeal damage, family history, parental demographic factors, and lack of stimulation [5]. Research has shown that environmental factors, including parental developmental stimulation, affect children's speech abilities (Istiqlal, 2021).

Stimulating aspects of language development is one of the strategies for treating early language and developmental speech disorders in infants. Based on the guidelines for implementing Stimulation Intervention Early Detection of Growth and Development (2005), stimulation is an activity to stimulate the basic abilities of children aged 0-6 years so that children grow and develop optimally. Provision of language and speech stimulation to infants starts from the period 0 to 12 months. Stimulating interventions can be given to babies by reading fairy tales, singing songs, doing storytelling activities with babies, and inviting babies to play by introducing new words [10]. All stimulation interventions parents give infants can be answered by the stages of language acquisition in the infants themselves. Attention must also be paid to the role of infants and parents, who are always actively involved in providing stimulation and receiving stimuli [11].

Previous research has examined the effect of stimulation and the development of language aspects of children aged 1-3 years [12], children aged 5-6 years [13], as well as descriptions of developmental stimulation given by parents to children aged 0-6 years [10]. However, a literature study conducted by researchers shows that no research has examined the link between stimulation of language development in infants 0-1 years old and language development achieved at that age. On the other hand, stimulation of development, especially language development, needs to be done early, or when the child is under one year old.

Based on the background above, the researchers wanted to examine the relationship between verbal stimulation provided by caregivers and the language development status of infants aged 0-12 months at the Cebongan Health Center, Salatiga.

II. METHOD

This research is quantitative and uses correlational research. The research was conducted at the Cebongan Salatiga Health Center in August-October 2021. The population in this study were all caregivers of children under 1-year-old at the Cebongan Health Center, Salatiga City. The sampling technique uses accidental sampling with a total sample of 52 caregivers. The variables in this study were giving verbal stimulation to children aged 0-12 months as the independent variable and the language development status of children aged 0-12 months as the dependent variable.

Researchers used two instruments in this study. Data on the baby's developmental status were collected using the Clinical Linguistic and Auditory Milestone Scale (CLAMS) questionnaire, while for children's language stimulation, a verbal stimulation questionnaire prepared by the researcher was used with the results of the validity test of the value of r count > r table = 0.25 and the reliability test of the alpha value = 0.867 or >0.70. CLAMS is a set of language tests that primary care levels can use to measure expressive language milestones obtained from parents' reports on children's verbal abilities and receptive language obtained from a combination of parental reports and direct observations of children in the field. The CLAMS questionnaire scoring was carried out through several steps, as follows:

Determining the child's developmental age at that time (chronological age).

Carry out a task force examination at two age levels lower than the estimated age (basal age) and continue the examination until the highest developmental age (ceiling age).

Sum up the value of the task force that the child can do between the basal and ceiling ages.

Calculate the equivalent value by adding the total weight of the decimal value of the task force above the basal age that the child can do.

Calculating the Developmental quotient (DQ) value through equivalent age divided by chronological age and then multiplied by 100.

The results of the DQ score are then interpreted into normal categories (DQ > 85), suspected (DQ 75-85), and mentally retarded (DQ < 75) [14].

The research was carried out through several steps: making a proposal, submitting ethical clearance, submitting a research permit at the research site, recruiting respondents, collecting data, and analyzing data. Recruitment of the respondents themselves was carried out by explaining the background and description of the research procedures to the prospective respondents, then asking for the willingness of the prospective respondents. If they are willing, then the prospective respondent signs an informed consent. The duration of the interaction between the researcher and the respondent is about 30 minutes, including filling out the provided questionnaire. After the questionnaire was filled out, the researcher ensured all the questions had been filled in and then recapitulated the research results for later processing. The research data were analyzed using the Spearman rank correlation test. The Spearman rank correlation test results are between -1<0<1. The researcher conducted data analysis after all the data was collected with the help of the Statistical Package for Social Science (SPSS) statistical processing computer program. This research obtained ethical clearance with No. 097/COMMISETIK/EC/7/2021 from the ethics commission of Satya Wacana Christian University before data collection was carried out.

III. RESULT

Table 1. Frequency Distribution of Respondent Characteristics

Categories	n	%
Caregiver age range (y.o)		
17– 25	10	19
26– 35	29	59
36 – 45	10	19
>45	3	6
Infants' age range (m.o)		
0-3	18	35
4-6	20	38
7-9	7	13
10-12	7	13
Infants' gender		
Boy	29	56
Girl	23	44

Based on the characteristics of the respondents, most of the caregivers were in the early adulthood age range (59%), followed by caregivers who were adolescents and late adults, each with 10%, and older adults with 6%. Meanwhile, most of the babies who were the subjects of this study were 4-6 months old (38%), with an average sex of boys (56%).

Table 2. Frequency Distribution of Verbal Stimulation in Infants Aged 0-12 Months

Categories	N	%
Low	2	4
Moderate	42	81
High	8	15
Total		

Table 3. Frequency Distribution of Language Development in Infants Aged 0-12 Months

Language Development	N	%
Normal	46	88
Suspect	5	10
Mentally retardation	1	2

Based on the statistical Spearman's rho test in Table 4, a significant result of 0.856 was obtained, which means that the

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p-value was > 0.05 so that Ho was accepted, meaning that there was no influence between the provision of verbal stimulation and the language development of infants 0-12 months. Meanwhile, Spearman's rho correlation value of 0.26 indicates a feeble correlation strength.

Table 4. Relationship between Verbal Stimulation and Language Development Status in Infants Aged 0-12 Months

			Verbal stimulation	Development of Language and Speech for Babies Aged 0-12 Months
Spearman's rho	Verbal stimulation	Correlation Coefficient	1,000	0,026
		Sig. (2-tailed)		0,856
		N	52	52
	Development of Language and Speech for Babies Aged 0-12 Months	Correlation Coefficient	0,026	1,000
		Sig. (2-tailed)	0,856	
		N	52	52

IV. DISCUSSION

In the results of the study, it was found that most caregivers had provided optimal stimulation to children, and it was also found that most babies had normal language development status. Descriptively, the optimization of verbal stimulation affects the baby's language development. Verbal stimulation provided by parents greatly influences brain development during infancy, 0-12 months, because at that time, the ability of brain plasticity can make it easier for children to accept learning and stimulation processes [15]. Adequate verbal and cognitive stimulation can positively affect infant language development in toddlerhood [16]. The verbal stimulation provided will stimulate the child's thinking and imagination to have a good effect on the child's level of language development.

Based on reports from caregivers in this study, verbal stimulation was carried out by inviting babies to communicate by playing, showing songs, and training children to say one or two simple words. Some caregivers in the low category in providing verbal stimulation do not often invite children to communicate, rarely invite children to play, do not respond to children, and often use the word "NO" for children. Caregivers like this generally give reasons that children still do not understand what is being said, and busy work makes them tired when caring for children.

If observed from the research data collected, babies with language development disorder characteristics have received optimal verbal stimulation. Even so, a small number of babies still have the characteristics of language development disorders. For example, babies aged 8 and 10 months have suspect characteristics, indicating that babies cannot yet understand the word "NO" and cannot use the word papa mama specifically. A 3-month-old baby was found to have the characteristics of mental retardation, namely, inability to respond to sounds, being unsettled when held, and not being able to make ooh, aaah, and uuuuh (cooing) sounds.

Based on the study's results, the developmental stimulation provided by most caregivers was at a high level, and there was no relationship between the provision of this stimulation and the child's current language development. A similar study conducted on subjects with different age ranges showed the same results as this study. According to the study, 58.5% of caregivers had provided good stimulation. As for language development, 89.0% of children have normal language development, and only 11.0% have questionable language development [17].

In this study, receptive and expressive language disorders can affect children's development. Receptive language disorders are defined as difficulties in understanding language or lack of responsiveness to the language conveyed. In contrast, expressive language disorders are difficulties communicating or expressing what is thought or described [14]. The symptoms of receptive and expressive language disorder are the same as the symptoms experienced by respondents when the researcher collected data, namely when spoken to the respondent did not pay attention to the researcher, lack of response from respondents, lack of social smile, unable to understand one or two words and respondents not wanting to beat around the bush.

V. CONCLUSION

Verbal stimulation in infants 0-12 months is not related to the status of infant language development. Besides stimulation, infant language development is also influenced by other internal factors, namely cognitive factors, heredity, and gender. According to the interpretation of the Developmental quotient in this study, several babies in the suspect and mentally retarded category have receptive and expressive disorders that need to be understood by caregivers in providing proper stimulation. There needs to be a way to detect the level of the baby's ability to receive developmental stimulation so that caregivers can create stimulation strategies according to the baby's abilities.

CONFLICT OF INTEREST

No conflicts of interest have been declared

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Android-Based Heart Rate Calculator Software Simplify Calculation of Karvonen Formula

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Abstract--- Background: Heart rate monitoring is one of the most objective and measurable methods for monitoring the intensity of physical activity. The Karvonen formula is used to find the synchronization between percentage units and bpm units in heart rate monitoring. However, the calculation using the Karvonen formula requires a significant amount of time, hence a simple and fast calculating aid is needed, one of which is the heart rate calculator in the form of an android software. Aim: This study aims to investigate the differences in the time required to execute the Karvonen formula calculation manually versus using an android software aid. Method: This research is a comparative study conducted on 145 subjects, who are individuals who are active in sports. Subjects were asked to work on the karvonen formula in writing, then work using a calculator in the form of android software. The calculation time of each method is then compared. Result: The results showed that the fastest time required to perform the Karvonen formula calculation in writing was 74 seconds, with calculation errors occurring in 38% of all subjects, despite using a calculator. Meanwhile, the fastest time required when the calculation was done using the software was about 6 seconds, or 12.3 times faster than in writing, and the calculation error that occurred was 0%. Conclusion: The heart rate calculator packaged in the form of software can make calculations to be 12.3 times faster and minimize the potential for calculation errors compared to calculations in writing.

Keywords-- Calculation, Heart Rate, Software, Time

I. INTRODUCTION

The heart rate frequency is one of the variables that describes the intensity of physical activity being performed by an individual [1]. In terms of physical activity, heart rate frequency is influenced by the magnitude of the activity load imposed on the body. This load can take the form of physical load (w), movement speed (v), activity duration (t), or repetitions (rep). A heavier physical load, faster movements, longer duration, or more repetitions, lead to a faster heart rate [2].

In the field of sports, physical activity load is often utilized in training programs to enhance physical performance. Loading is gradually increased in accordance with the planned training program [3]. The aim of this loading is to condition the athlete's body to perform activities with a certain intensity for a certain duration. However, ensuring that the athlete has performed physical activity at the targeted intensity poses a challenge for the coach. During training, the athlete cannot be physically touched and it is difficult to observe the physiological fluctuations experienced by the athlete. The easiest way is to monitor the athlete's heart rate frequency using a sensor device that can be connected to a remote monitoring dashboard.

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In modern times, heart rate monitoring has become a trend in the world of sports. Not only in professional sports, but heart rate monitoring is also widely used by individuals who have a passion for exercise. Many people use watches that have heart rate sensor features. This means that people can easily know their heart rate numbers in real-time, which also means that they have awareness to monitor how much physical activity their body is experiencing in a training session. However, many athletes still do not understand the meaning of the heart rate frequency numbers that appear on their devices.

Heart rate frequency numbers that appear on devices are usually in beats per minute (bpm), which means the number of beats that occur in one minute. Heart rate frequency can provide us with information about whether the exercise being performed is light, moderate, or heavy. Additionally, it can also be used to assess whether the exercise being performed is in line with the intended intensity. However, to know this information, the bpm number must first be converted to a percentage (%).

Many heart rate monitoring devices use percentage values that start from an absolute zero bpm (0) as the lower limit (0%), up to the maximum heart rate (MHR) as the upper limit (100%). However, in reality, human heart rate during physical activity never falls below the resting heart rate (RHR). Therefore, the value of 0% should be at the RHR, not at 0 bpm. Heart rate frequency may fall below RHR when the body is in a deep sleep state, assuming a basal physiological condition, where the heart rate frequency at that time is called the basal heart rate (BHR). The range between RHR (0%) and MHR (100%) is called the heart rate reserve (HRR), which requires the Karvonen formula to calculate [4].

Karvonen formula:

$$THR = ((MHR - RHR) \times \%HR) + RHR$$

BHR	= Basal Heart Rate (bpm)
RHR	= Resting Heart Rate (bpm)
MHR	= Max Heart Rate (bpm)
%HR	= HR Percentage measured (%)
THR	= Target Heart Rate (bpm)

Calculations using the Karvonen formula require time and precision, and may not be easy for some individuals. However, in practical field settings, numbers are needed immediately. Moreover, calculation errors that affect data validity pose a direct risk in the field. The Karvonen formula is not fundamentally complicated, but calculations are typically not performed only once for each athlete; rather, they are performed nine times in 10% to 90% intervals. Therefore, a tool that can facilitate Karvonen formula calculations and minimize potential calculation errors is needed.

Incorporating the Karvonen formula into an Android-based heart rate calculator software is considered the most appropriate option currently. This is not only because the Android operating system has become a part of society in the form of smartphones, but also because creating Android software is relatively easier when done using the Kodular platform. It is expected that an Android-based heart rate calculator can simplify and accelerate calculations while minimizing the risk of calculation errors. This study aims to compare the time required to manually calculate the Karvonen formula with that of using an Android-based software calculator.

II. METHOD

This study is a comparative study that compares the duration of calculating the Karvonen formula using manual and android-based software methods. The study was conducted on physically actives subjects consisting of physical education students, sports practitioners, and lecturers, with a total of 145 subjects. The variables studied were the duration of manual

calculation, the duration of calculation using android-based software, and the number of calculation errors in both methods. Manual calculation was done in writing using pencil and paper and conventional calculator use was allowed. Meanwhile, calculation using android-based software was done using IEXC Intensity Calculator software. The stopwatch was used as an instrument to measure time, while calculation errors were identified if the calculated result did not match the expected result or if the subject was unable to continue the calculation.

IEXC Intensity Calclulator [5] is an android-based software programmed to perform mathematical operations on the Karvonen formula. Users only need to enter the subject's name or code, age, and RHR, then press the "calculate" button. After pressing the calculate button, the results will appear immediately in the form of numbers in bpm units, which have been mapped and describe bpm numbers for each percentage of heart rate, starting from 10% to 90%.

All subjects were given the same treatment, which was to be explained about the Karvonen formula first, then asked to do the calculation manually using writing media, and then asked to use an android-based calculator on the smartphone provided. In manual calculation, the time was calculated from when the subject started reading the Karvonen formula until the final result was found or the subject stated that they gave up and could not continue. If the subject stated that they gave up and could not continue, the researcher would give an example of how to calculate and then give a second chance for the subject to calculate again, but the result would still be considered as a calculation error. Calculation that is considered as a correct result is if the subject does it correctly in the first attempt.

In calculating using android-based software, the software was prepared in a dashboard display and ready to use. The time was calculated from when the subject pressed the button to enter the calculator page until the calculation was completed, marked by the appearance of the result number. The time notes from both methods were then tested for normality using the Kolmogorov-Smirnov test followed by a difference test using an independent t-test.

III. RESULT

The study conducted on 145 participants showed that the fastest time required to perform the Karvonen formula calculation manually without software was 74 seconds, with an average time of 208.9 ± 5.28 seconds, and calculation errors occurred in 38% (55 subjects) of the total subjects, despite the use of a calculator. Meanwhile, the fastest time required when the calculation was done using the software was 6 seconds, or 12.3 times faster than without software, with an average time of 9.26 ± 1.4 seconds, and zero calculation errors occurred.

Table 1. Descriptive statistic

	Mean	Fastest
Time		
With app (s)	9,26 ± 1,4	6
Without app (s)	208,9 ± 5,28	74

Table 2. Test of Normality Kolmogorov-Smirnov

Data distribution	Statistic	df	P-value
With app	0,063	145	,200*
Without app	0,063	145	,200*

A normality test using Kolmogorov-Smirnov indicated that the data from both variables were normally distributed ($p > 0.05$). The result of the independent t-test showed that p=0.00 (<0.05), indicating a significant difference between the two variables.

IV. DISCUSSION

The study revealed that the use of Android software significantly saves time in calculating the Karvonen formula.

The calculation becomes 12.3 times faster compared to the manual calculation without the software. Moreover, there were no calculation errors observed when the calculation was performed using the software. This implies that the calculation can be done without worrying about the accuracy of the results, as the software will provide the correct numbers based on the programmed formula.

Forgot the formula

Some subjects who made calculation errors admitted to forgetting the formula for Karvonen's formula. This could be a simulation that in the field, coaches may forget the Karvonen's formula, which could hinder calculation and thus impede athlete monitoring during training sessions. This could affect the coach's concentration and even make them unable to monitor the intensity variables of the training. Coaches may be able to store the formula in a notebook or smartphone, but this is still not efficient because the coach still has to perform mathematical operations afterward.

Math skills

Mathematical calculation skills are the main factor determining the success of the calculation. The study found that there were calculation errors in 55 people or 38% of all subjects. Even from those 55 people, some were unable to complete the mathematical operations and gave up. This was unexpected considering that all subjects were over 18 years old and the Karvonen formula was only a basic mathematical operation that was not too complicated. To overcome this, the presence of a heart rate calculator in the form of an android application seems to be very important because it can replace the coach in performing the mathematical operations of the Karvonen formula. In fact, mathematical operations performed by software have been proven to have a high level of accuracy and eliminate the risk of calculation errors, except for errors that occur when entering numbers into the calculator.

Calculation media

In this study, the researcher provided manual calculation media for the subjects. However, the availability of calculation media in real-world field settings would be crucial. Based on the researcher's observation during the subjects' calculation of the Karvonen formula, each subject wrote between 4 to 6 lines for one calculation. If the calculation was done 9 times, the subject would need space for 36 to 54 lines of mathematical operations. This amount requires 1 A4-sized paper. If the calculation is done using a ballpoint pen and the results need to be saved, it would require a lot of A4-sized papers in the field, which is wasteful and inefficient.

Limited time

In real-life situations, coaches do not have much time to perform calculations. If a coach needs to do calculations, it will be done quickly and in a hurry. This increases the risk of calculation errors. Moreover, if the calculation is done for a large number of athletes, it will take up a lot of time. During the training program period, the Karvonen formula is not only calculated once. As each athlete improves their performance, there is a possibility that their cardiovascular system will improve, including the possibility of a decrease in RHR. Since RHR is part of the Karvonen formula, calculating the percentage of HRR needs to be done periodically every time there is an improvement in the athlete's physiology. This is necessary to establish new standards for the athlete in terms of heart rate frequency.

Advantages of using android based software

Smartphones have become one of the most integral devices in people's lives today, as almost everyone carries one wherever they go. Smartphones that use the Android operating system have a large user base, and almost everyone knows how to operate them proficiently. Therefore, if the Karvonen formula is packaged into an Android application, it will provide easy access and operation for coaches in the field, compared to carrying a pen and paper which can be quite cumbersome. The speed and accuracy of the calculations will also provide comfort for coaches, so they don't have to worry about the accuracy of their calculations, even when calculating for a large number of athletes.

The mathematical operation of the Karvonen formula can also be packaged in software other than Android, such as software based on Windows, Linux, or macOS, given its simple formula. In fact, the mathematical operation of the Karvonen formula can also be performed using spreadsheet software such as Microsoft Excel. However, software that operates on computer systems such as Windows, macOS, or Linux requires users to use a computer or laptop to operate it. Computers or laptops are not as compact and user-friendly as smartphones, which can still be inconvenient for coaches to bring to the field. Android is the best option in this case. Even if a tablet is used, the physical size of the tablet is still more compact than a PC or laptop.

V. CONCLUSION

The Karvonen formula for calculating heart rate is easier and faster to operate when packaged in an Android-based software. In addition to making calculations 12.3 times faster, it also eliminates the risk of calculation errors, provides ease of access, and inherent efficiency for coaches during program monitoring in the field.

CONFLICT OF INTEREST

No conflicts of interest have been declared.

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Lifestyle Factors on Prevalence of Diabetes Mellitus at The Auxiliary Health Centre of Tahulu Village, Merakurak-Tuban Regency

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Abstract--- *Diabetes Mellitus (DM) is one of the biggest health diseases in the world that requires serious treatment. DM can be caused by a person's lifestyle which includes diet and physical activity. This study aims to determine the relationship between lifestyle with the diabetes mellitus at the Tahulu Village Auxiliary Health Center, Merakurak District, Tuban Regency in 2021. The research used a cross sectional approach. The population were all outpatients who did routine check-ups at the Tahulu Village Auxiliary Health Center with a total of 50 respondents in the last 3 months (January-March) and the sample size of the study was 45 respondents using simple random sampling. The independent variable in this study is lifestyle by using questionnaire instrument, while the dependent variable is the incidence of diabetes mellitus by using a blood sugar insrument. Contingency coefficient test was used to analyzed the research variables with the significant value.The results of this study indicate that there was a relationship between lifestyle with the incidence of diabetes mellitus with the outpatient in the sub-health center of Tahulu Village, Merakurak District, Tuban Regency. This is evidenced by the contingency coefficient test with the Phi value = 0.000<0.05 it means H1 was accepted, that there was a relationship between lifestyle and Diabetes Mellitus with the outpatient in the sub-health center of Tahulu Village, Merakurak District, Tuban Regency. The conclusion of this study is that there was a significant relationship between lifestyle with the prevalence of Diabetes Mellitus with the outpatient at the Tahulu Village Auxiliary Health Center, Merakurak District, Tuban Regency in 2021. It is hoped that respondents will be able to implement a healthy lifestyle to avoid the incidence of diabetes mellitus.*

Keywords-- *Lifestyle; Diabetes Mellitus; Healthy Lifestyle*

I. INTRODUCTION

Based on the International Diabetes Mellitus Federation, diabetes is the one of the world's biggest health problems in the 21st century. In 2015, the incidence of Diabetes Mellitus in the world was 1 in 11 adults experiencing diabetes, and the estimated incidence of impaired glucose tolerance was 1 in 15 adults. These figures are expected to increase especially in the urban population, where there were medical challenges and a larger economy. In addition, global health spending is currently the largest used for the resolution of diabetes [1].

The results of a preliminary survey conducted by researchers in February 2021 at the Tahulu Village Substitute Health Center, out of 10 (100%) outpatients 7 (70%) of them have an unhealthy lifestyle, namely unwilling to apply a healthy diet and rarely do sports activities, often consume high carbohydrate foods and instant foods such as instant noodles and bread.

Then 3 (30%) other patients have a healthy lifestyle, namely implementing a healthy and nutritionally balanced diet and

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routine physical activity and exercise. They limit the consumption of instant food and always eat vegetables and healthy side dishes every day. Then, from the initial survey, out of 10 (100%) outpatients, 7 (70%) of them had Diabetes Mellitus, and 3 (30%) patients did not have Diabetes Mellitus.

In everyday life, unhealthy lifestyle behaviors can cause blood sugar levels to be high beyond normal limits, which can lead to the risk of developing Diabetes Mellitus. Some of these lifestyles are diet and physical activity. For example, frequent eating of highcarbohydrate foods, instant and sweet foods, and smoking. An unhealthy diet causes a lack of balance between carbohydrates and other ingredients needed by the body. As a result, the sugar content in the body becomes high beyond the work capacity of the pancreas and results in Diabetes Mellitus [2] . In addition to an unhealthy diet, lack of physical activity is also a predisposing factor for Diabetes Mellitus. The increased risk of Diabetes Mellitus in physical activity occurs due to a decrease in muscle contraction which causes a reduction in cell membrane permeability to glucose [3].

The general objective of this study was to determine the relationship between lifestyle and the incidence of diabetes mellitus at the auxiliary health center of Tahulu Village, Merakurak District, Tuban Regency in 2021.

The specific objectives are to identify the lifestyle of outpatients at the auxiliary health center of Tahulu Village, Merakurak District, Tuban Regency in 2021, to identify the incidence of Diabetes Mellitus at the auxiliary health center of Tahulu Village, Merakurak District, Tuban Regency in 2021, to analyze the relationship between lifestyle and the incidence of Diabetes Mellitus at the auxiliary health center of Tahulu Village, Meraurak District, Tuban Regency in 2021.

The results of this study are expected for respondents to be able to implement a healthy lifestyle to avoid the incidence of Diabetes Mellitus.

II. METHOD

This study uses a correlation analytic method is a way to determine the presence or absence of variable relationships. The strength between variables can be seen from the correlation coefficient value. with a cross sectional approach, the scope of this study is the virginity of medical surgery. Respondents in this study were outpatients at the Health Center of Tahulu Village Assistant Kec. Merakurak Kab. Tuban in January - March with a population of 50 and a sample of 45 respondents was taken. To obtain the necessary data, this study used questionnaires and blood sugar checks.

The research was conducted at the auxiliary health center of Tahulu village, Merakurak sub-district, Tuban district. This research was conducted by the researcher himself and . Data collection in this study, the researcher took a research sample, then gave an explanation of the purpose of the study to the respondent. After that the respondent was given a questionnaire sheet and the respondent filled out the questionnaire sheet. Then the researcher checks the temporal blood sugar to the respondent.

After all data collection techniques are collected, data processing is carried out using the editing, coding, scoring, tabulating and data interpretation stages. The data analysis technique used in this study is to use the contingency coefficient test.

III. RESULT

The characteristics of respondents based on age, gender and occupation in this study are outpatients at the Puskesmas Pembantu Desa Tahulu Kec. Merakurak Kab. Tuban.

Table 1 Distribution of respondents based on age

No.	Age	N	%
1	40-54 years old	21	46.7
2	55-69 years old	21	46.7
3	70-84 years old	3	6.7
Total		**45**	**100**

Source : Primary Data Researcher, 2021

Based on table 1, it can be seen that most of the respondents at the Tahulu Village Auxiliary Health Center were aged 40-54 years and 55-69 years, and a small proportion were aged 70-84 years.

Table 2 Distribution of respondents based on gender

No.	Gender	N	%
1	Male	**17**	37.8
2	Female	**28**	62.2
	Total	**45**	**100**

Source : Primary Data Researcher, 2021

Based on table 2, it can be seen that most of the gender of respondents at the Tahulu Village Sub-Community Health Center are female and a small proportion are male.

Table 3 Distribution of respondents based on occupation

No.	Jobs	N	%
1	Farmers	11	24.4
2	Labor	5	11.1
3	Merchant	10	22.2
4	Not Working	19	42.2
	Total	**45**	**100**

Source : Primary Data Researcher, 2021

Based on table 3, it can be seen that most respondents do not work and a small proportion work as laborers.

Table 4 Distribution of Respondents Based on Lifestyle

No.	Lifestyle	N	%
1	Healthy	8	17.8
2	Healthy Enough	11	24.4
3	Unhealthy	26	57.8
	Total	**45**	**100**

Source : Primary Data Researcher, 2021

Based on Table 4, it shows that most of the respondents at the Tahulu Village Auxiliary Health Center have an unhealthy lifestyle and a small proportion have a healthy lifestyle.

Tabel 5 Distribution of Respondents Based on the Incidence of Diabetes Mellitus

No.	Gender	N	%
1	Diabetes Mellitus occurs	26	57.8
2	No Diabetes Mellitus Occurs	19	42.2
	Total	**45**	**100**

Source : Primary Data Researcher, 2021

Based on Table 5, it shows that most of the respondents at the Tahulu Village Auxiliary Health Center have Diabetes Mellitus and a small proportion do not have Diabetes Mellitus.

Table 6 Cross Table of the Relationship between Lifestyle and the incidence of Diabetes Mellitus

No		Lifestyle	DM Occurs		No DM Ocurs		Total	
			f	%	f	%	f	%
	1	Healthy	0	0	8	100	8	100
	2	Healthy Enough	0	0	11	100	11	100
	3	Unhealthy	26	100	0	0	26	100
	Total		**26**	**57.8**	**19**	**42.2**	**45**	**100**

Source : Primary Data Researcher, 2021

Based on Table 6, it is explained that respondents who have a healthy and moderately healthy lifestyle do not have Diabetes Mellitus, while respondents who have an unhealthy lifestyle have Diabetes Mellitus.

The analysis in this study used the Contigency Coefficient test using SPSS For Windows Software with a significance level of α = 0.05, the Phi value = 0.000 where 0.000

IV. DISCUSSION

The results showed that most of the respondents at the Tahulu Village Auxiliary Health Center had an unhealthy lifestyle and a small proportion had a healthy and quite healthy lifestyle. Healthy pattern begins with lifestyle, lifestyle is a person's behavior shown in activities, interests and opinions, especially those related to self-image to reflect his social status. A healthy lifestyle includes sleeping habits, eating with balanced nutrition, not consuming soda drinks, and exercising regularly.

This study shows that most respondents still have an unhealthy lifestyle. This is caused by an unhealthy diet that consumes a lot of instant and sweet foods such as Instant Noodles, canned food, sweets and bread, and does not pay attention to the meal schedule.

A healthy diet is defined as a diet with a 3J plan, namely the amount, type, and regular meal schedule. An unhealthy diet causes a lack of balance between carbohydrates and other nutrients needed by the body. As a result, the sugar content in the body becomes high beyond the work capacity of the pancreas and results in diabetes mellitus [4].

From this study, it shows that most respondents still lack physical activity and exercise, this can be seen from filling out the questionnaire contained in the points of physical activity and exercise that most respondents answered rarely and some even answered never. According to Wiardani (2009), lack of physical activity is also a factor in an unhealthy lifestyle. This is because, normal muscles in a state of rest that can result from lack of physical activity are hardly permeable to glucose unless the muscle fibers are stimulated by insulin. Decreased muscle contraction leads to reduced cell membrane permeability to glucose. This results in impaired glucose transfer into cells and a reduced response to insulin which leads to a resistant state and can cause high blood sugar in the body.

From this study it was found that most respondents still did not sleep regularly, most of the respondents slept less than 6 hours per day. Sleep is a basic and essential biological function in human life. Sleep is an opportunity for physical, mental, and emotional restoration. Lack of sleep quality and quantity can produce metabolic and cardiovascular disorders. Epidemiological data shows that people with nighttime sleep duration of less than 6 hours have a high risk of developing Type 2 DM [5]

From this study, unhealthy lifestyles were found to be prevalent among those aged 55-84 years. Age can affect the gradual decline in digestion, physical, mental and social activities. The higher a person's age, it can have an impact on his health and his lifestyle cannot be controlled because the elderly experience a decrease in cognitive abilities The age group of 60 to 79 years is an elderly period (Elderly), a person's perceptual and numerical cognitive abilities

experience a decline in old age. getting old with predictable physical and behavioral changes that occur in all people experience a gradual deterioration in digestion, physical, mental and social activities [6].

The results showed that most of the respondents at the Tahulu Village Auxiliary Health Center had Diabetes Mellitus and a small proportion did not have Diabetes Mellitus.

Diabetes mellitus is a heterogeneous group of disorders characterized by elevated blood sugar levels that exceed normal values, i.e. test blood sugar (GDS) > 180 mg/dl and fasting venous blood sugar (GDP) > 126 mg/dl. Glucose normally circulates in certain amounts in the blood. Glucose is formed in the liver from food consumed. Insulin, a hormone produced by the pancreas, controls blood glucose levels by regulating its production and storage [7]

From this study, it was found that most of the respondents had Diabetes Mellitus with the results of the blood sugar check (GDS) > 180 mg/dl and more occurred at the age of over 40 years because the ability of the pancreas to produce insulin will decrease at a higher age. Diabetes mellitus is more likely to occur in women, because the metabolism in women is slower than in men, so women have a greater chance of developing diabetes mellitus [8].

From this study, respondents who did not work had higher blood sugar levels than respondents who had jobs. States regarding the relationship between work and the incidence of Diabetes Mellitus that the absence of work makes the body less mobile and can trigger obesity [9]. This will cause insulin resistance. This situation causes body tissues to become less sensitive

to the effects of insulin. So that sugar in the blood has difficulty leaving the blood and entering cells

Based on table 5.6, it is explained that respondents who do not occur Diabetes Mellitus are found in respondents who have a healthy and quite healthy lifestyle, while respondents who occur Diabetes Mellitus are found in respondents who have an unhealthy lifestyle.

Based on this study, respondents who have an unhealthy lifestyle can lead to the incidence of Diabetes Mellitus, this is because an unhealthy lifestyle has a bad influence on the results of blood sugar checks, this is because Diabetes Mellitus is a degenerative disease that is not purely damaged pancreas but a disease caused by an unhealthy lifestyle. For example, often consuming foods that are high in sugar, foods that are high in carbohydrates, not paying attention to eating schedules, and lack of physical activity and exercise [10]. Blood sugar monitoring is one of the five pillars of diabetes mellitus management if a person's lifestyle is unhealthy, it will also result in high blood sugar check results. The high incidence of Diabetes Mellitus is also caused by frequent consumption of muniman and foods that are high in sugar.

V. CONCLUSION

Most outpatients at the Puskesmas Pembantu Desa Tahulu, Merakurak District, Tuban Regency in 2021 had an unhealthy lifestyle. Most of the Most outpatients at the Puskesmas Pembantu Desa Tahulu, Merakurak District, Tuban Regency in 2021 had Diabetes Mellitus. There is a significant relationship between lifestyle and the incidence of Diabetes Mellitus in outpatients at the Puskesmas Pembantu Desa Tahulu, Merakurak District, Tuban Regency in 2021.

CONFLICT OF INTEREST

No conflicts of interest have been declared

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Factors Of Implementing Documentation Of Nursing Care In The Intensive Care Unit Space: A Systematic Review

Ninuk Dian K[1], Nuzul Qur'aniati[1], Nur Fikri[1*]

Abstract--- Introduction: Nursing documentation is the most important part of the nursing process, there are many things in the form of information related to what has been given and how the progress of the success of nursing care and the resulting impact. to find out the factors that cause the implementation of nursing care documentation. Methods: The study design uses a systematic review by compiling literature from database. Searching for articles and journals is done in the scope of the Scopus, PubMed, Science Direct, EBSCO databases using predefined keywords, then after the data is obtained, the research journal is reviewed. Results: A total of 15 article according to the inclusion criteria. 230 articles were found, from four databases: 157 articles in Scopus, 22 articles in PubMed, 8 articles in Science Direct, 43 articles in EBSCO Conclusion: Factors that affect the quality of nursing documentation include hospital management, infrastructure, organization patient, work environment with the existence of factors that support one another, nursing documentation can be carried out properly. Conclusions: Implementation of patient safety goals can be improved through efforts to increase human resources (nurses) using the knowledge management model approach.

Keywords-- Knowledge Management ; The Patient's Safety Culture ; Attitude

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I. INTRODUCTION

Nursing documentation is the most important part of the nursing process, there are many things in the form of information related to what has been given and how the progress of the success of nursing care and the resulting impact, will later be used as material for evaluating the development of the patient's condition. Without clear and correct nursing documentation, nursing activities that have been carried out by health workers in an effort to recover patients cannot be accounted for. (Rachmania, Sunaringtyas and Widayati, 2019)

The prevalence of the use of medical records or integrated development notes by (Kamil, 2019) found that integrated medical record evaluations needed to be increased with research results of 29.7% corrections with crossed out and initials and none of the medical records used standard abbreviations, 61.5 % record of clear and concise offerings (Kamil, 2019). Data from the results of Root Cause Analysis (RCA) is that one hospital in America shows 65% sentinel events, 90% of the causes are communication and 50% occur during patient handover. The prevalence of CPPT use according to a literature study conducted by (Nopriyanto, Hariyati and Ungsianik, 2019) that the completeness analysis of 81 CPPT samples with incomplete CPPT implementation results was 8.6% or as many as 7 respondents and complete CPPT implementation results were 91, 4% or 74 respondents.

So that with the implementation of a documentation system that has not been effective and with a review of the factors that influence nurse documentation. It is hoped that nurses can improve documentation as an effort to improve the quality of nursing services.

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II. METHOD

Study Design

The design of this study uses a systematic review. The preparation of this systematic review is based on literature studies from various electronic databases, Scopus, PubMed, Science Direct, EBSCO by conducting a comprehensive review using the PRISMA guidelines as a guide in making articles related to factors implementing nursing care documentation in the ICU room. The keywords used are "nursing documentation", "quality" **Population, Sample, and Sampling**.

Strategi yang digunakan dalam melakukan penyeleksian artikel adalah menggunakan PICOS framework. Populasi/Problem pada perawat ruang intensive care unit , Intervention : pelaksanaan dokumentasi asuhan keperawatan, Comparasion : tidak ada pembanding, Study : Kuantitatif.

Instruments

The instrument used is a journal accessed from an existing database. Data collection techniques in this study the authors will identify from relevant journals accessed through databases including Scopus, PubMed, Science Direct, EBSCO.

Procedure

The preparation of a systematic review uses four steps, namely identification of journals, selection of quality assessment reports, abstraction in the form of qualifications from the results of each combined study, analysis, namely merging and reporting of the results of systematic reviews..

Data Analysis

The data analyzed were library research data from journals taken from four databases, namely Scopus, PubMed, Science Direct, and EBSCO databases. The method of analysis in this systematic review is descriptive by explaining through narration the results of the research described in the source. The narrative approach is carried out with the main objective of gathering factors for implementing nursing care documentation in the ICU

Ethical Clearance

This research does not require ethical testing.

III. RESULT

This research does not require the results of a literature search to find 15 articles that are in accordance with the systematic review. The literature search that has been analyzed is as follows: ethical test.
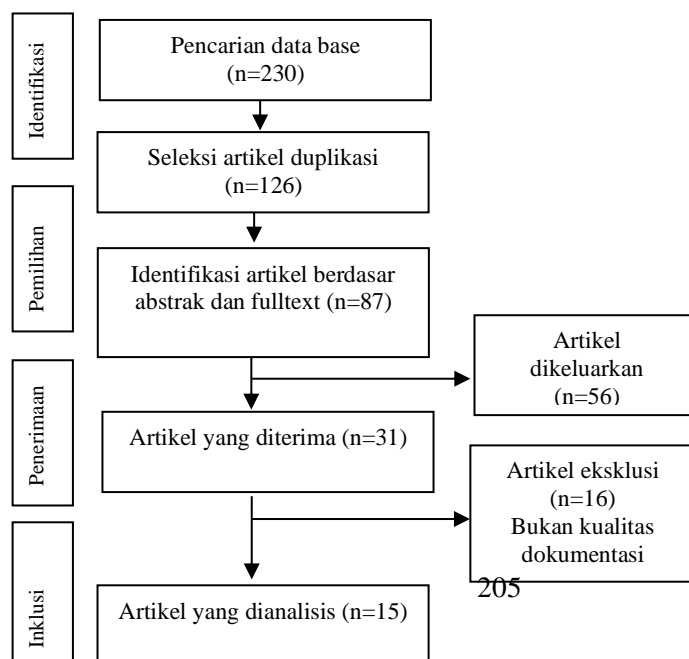
Figure 1. The process of selecting articles resulted in 15 articles that could be synthesized according to the inclusion criteria.

Table 2. Summary Search Results Study Articles Systematic Review

NO	Judul dan Penulis	Metode	Hasil
	Development of Nursing Diagnosis & Intervention Instrumen Based on Standardized Nursing Language (Nanda-I, NOC,NIC) (RACHMANIA, 2016)	Design : Action research Sample : 13 participants and 8 samples Variables: 1. Nursing Diagnostic Instruments 2. Intervention Instruments Instruments : Observation sheet Analysis : 1. Pearson Product Moment Correlation test 2. Cronbach alpha test	1. Stage 1 The results of the evaluation of diagnostic instruments and nursing interventions use good standards. 2. Nurses in the Lotus Room received recommendations through FGDs to apply standardized nursing language diagnoses and interventions made by researchers based on NANDA on nursing diagnoses and NOC on outcome criteria and NIC on nursing interventions. 3. Phase 2 of dissemination and training of nursing documentation instruments based on Standardized Nursing Language (NANDA-I, NOC, NIC) 4. The instrument was developed for patients with a medical diagnosis of Diabetes Mellitus, so nurses carry out nursing documentation for DM patients. 5. The development of diagnostic instruments and nursing interventions based on the results of the FGD activities is declared valid and reliable
	Nursing Diagnoses, Interventions, and Activities as Described by a Nursing Minimum Data Set (Sanson et al., 2019)	Design : Prospective observational study Sample : 435 patients in the oncology unit Variables: 1. Nursing diagnosis 2. Nursing interventions 3. Implementation of nursing Instruments : Professional Assessment Instrument (PAI) Analysis : 1. Software IBM SPSS Statistics for Windows, version 21.0 (IBM Corp, Armonk, New York) 2. Spearman's nonparametric correlation 3. Student t test 4. Levene's test 1. 5. One-way analysis of variance and Tukey Kramer post hoc tests	1. Nursing diagnoses differ from medical diagnoses (F=8.151, P<.001) 2. The highest nursing diagnosis is a patient with a medical diagnosis of malignant neoplasm of respiratory and intrathoracic organs compared to 3 categories 3. Significantly varied between nursing interventions and medical diagnoses (F=18.047, P<.001) 4. The highest nursing interventions are patients with a medical diagnosis of malignant neoplasm of respiratory and intrathoracic organs compared to 3 categories 5. Significantly varied between nursing implementation and medical diagnosis (F=43.610, P<.001) 6. The highest nursing implementation is a patient with a medical diagnosis of malignant neoplasm of respiratory and intrathoracic organs compared to 3 categories
3.	Nursing Care Plans Based on NANDA, Nursing Interventions Classification, and Nursing Outcomes Classification: The Investigation of the Effectiveness of an Educational Intervention in Greece (Patiraki et al., 2017)	Design : quasi-experimental study Sample : Register nurse working in primary care (N=19) Variable : 1. Nursing plan 2. The effectiveness of educational interventions Instruments: Chatzopoulou's Analysis : 1. Kolmogorov–Smirnov test 2. IBM SPSS version 21.0 Wilcoxon	Pre-test A number of seven (36.8%) and five (26.3%) respondents answered that they had never carried out the minimal level of nursing process. Post test After education and knowing the contents of the treatment plan, more respondents (n = 12 [63.2%] and n = 2 [10.5%]) answered that they did not carry out the nursing process and care plan at a minimal level. Before and after education, the majority of respondents did not use several taxonomies for documentation in their daily implementation (pre 15 [78.9] vs. post 15 [78.9], p[paired] = 1,000) Before intervention education only 5 respondents (26.3%) used taxonomies NANDA for nursing documentation, after education increased significantly (p [paired] = .013) a number of 15 (78.9%) respondents reported using the nanada taxonomy in daily practice. Only a few respondents used other nursing taxonomies in documentation, pre and post educational interventions such as
1.	Simulated electronic health documentation: A cross-sectional exploration of factors	Design : observational study with a cross sectional design using an online survey	Nursing and medical professionals have differing experiences with the use of EMR. This depends on the sector they work in and the usability features being

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NO	Judul dan Penulis	Metode	Hasil
	influencing nursing students' intention to use (Chan *et al.*, 2020)	Sample : 224 medical professionals and 73 nurses, divided by gender and age and place of work Variables: 1. Comparative survey of the use of EMR in the medical and nursing professions in the hospital and primary care sector in Australia 2. A comparative survey of the use of EMR in the medical and nursing professions in hospitals and the primary service sector in Finland Instruments : 1. Scale (NuHISS) developed and validated by Finnish researchers 2. Questionnaire with 13 statements of EMR clinician impressions 3. Impressions obtained about the use of EMR: ease of use, benefits, and collaboration. We report on responses from medical and nursing professionals working in clinical practice settings in Australia, including the primary care and hospital sectors in 2020. Analysis : test for relationship 1. Descriptive with Chi squared (X2) 1. 2. Non-parametric analytics with Kruskal-Wallis	measured. 1. In the study sample, the features of technical quality were more positively experienced by doctors in the primary care sector than by nurses as well as ease of access to patient information and error prevention. 2. In the hospital sector, nurses' experience with EMR is more positive with respect to support for completion of routine tasks, learning ability, ease of obtaining patient information and patient data entry.
5.	Article Evaluation of an Electronic Medical Record Module for Nursing Documentation in Paediatric Palliative Care: Involvement of Nurses with a Think-Aloud Approach S (Kernebeck *et al.*, 2022)	Design: cross-sectional samples: undergraduate nursing students from the Nursing study program at the State University of Malaysia as many as 133 respondents. With inclusion criteria • students who are in their second to fourth years • have participated in and accessed the simulation web application as part of teaching and learning activities during the 2016-2017 academic year variables: 1. Simulation of electronic health documentation a cross-sectional exploration of the factors influencing nursing student intentions instruments 1. Internally consistent iNES Survey Questionnaire 2. The instrument consists of Perceived Usefulness (7-item), Perceived Ease of Use (6-item), 3. iNE usage motivation questionnaire (20-items) Intention to use (6-items) 4. The response questionnaire uses a 5-point Likert scale with 1 = strongly disagree to 5 = strongly agree. Analysis: 1. Descriptive with t-test 2. Analysis of variance (ANOVA) was used to compare differences in motivation for using the iNES application during documentation. 3. Data analysis was performed using SPSS (19.0) and AMOS (23.0).	1. Perceived usefulness is the most influential factor of students' intention to use the simulation web application. 2. Perceived ease of use influences their perceived usefulness significantly. 3. Nurse educators should use a simulated web application before assigning students access to it to practice electronic health documentation. 4. Availability of stable internet access and IT support is important to influence students' perceived ease of use and intention to use the application.
6.	Nursing care documentation practice: The unfinished task of nursing care in the University of Gondar Hospital (Kebede, Endris and Zegeye, 2017)	Design : Cross-sectional study Sample : All nurses working in inpatient care at Gondar University Hospital (N=220) Variable: 1. Implementation of nursing documentation 2. Unfinished nurse duties Instruments : 1. Ethiopian Hospital Reform Implementation Guideline (EHRIG)	Organizational factors affect nursing documentation 1. Training Yes : 61.7% No : 38.3 % 2. Patient nursing documentation Yes : 71.8 % No : 28.2 % 3. Patient care per day 1 – 8 : 40.3 % ≥ 9 : 59.7 % 4. Appropriate documentation sheet Yes : 84.5 % No : 15.5 %

NO	Judul dan Penulis	Metode	Hasil
		2. Felege Hiwot Analysis : 1. EPI Info version 3.5.3 SPSS version 20	More than a third of respondents 74 (36%) revealed reasons for not doing nursing documentation because: 1. Short time 19%, 2. Many patients 22%, 3. No time and many patients 62% 4. No formatting 2.2% 5. No place 4.3 % Knowledge and attitude 1. Good knowledge 58.3% 2. Positive attitude 60.7% Implementation of nursing documentation 1. Nursing documentation is well done 37.4%. 2. Implementation of nursing documentation is well done in the ward 11-52% More than half of the nurses do nursing documentation well in the pediatric room 52.8%
7.	*A National Survey of EMR Usability: Comparisson Between Medical and Nursing Profesions In the Hospital and Primary Care Sectors in Australian and Finland.* (Lloyd *et al.*, 2021)	Design : observational study with a cross sectional design using an online survey Sample : 224 medical professionals and 73 nurses, divided by gender and age and place of work Variables: 1. Comparative survey of the use of EMR in the medical and nursing professions in the hospital and primary care sector in Australia 2. A comparative survey of the use of EMR in the medical and nursing professions in hospitals and the primary service sector in Finland Instruments : 1. Scale (NuHISS) developed and validated by Finnish researchers 2. Questionnaire with 13 statements of EMR clinician impressions 3. Impressions obtained about the use of EMR: ease of use, benefits, and collaboration. We report on responses from medical and nursing professionals working in clinical practice settings in Australia, including the primary care and hospital sectors in 2020. Analysis : test for relationship 1. Descriptive with Chi squared (X2) 2. Non-parametric analytics with Kruskal-Wallis 2. 1. SPSS Software	Nursing and medical professionals have differing experiences with the use of EMR. This depends on the sector they work in and the usability features being measured. 1. In the study sample, the features of technical quality were more positively experienced by doctors in the primary care sector than by nurses as well as ease of access to patient information and error prevention. the hospital sector, nurses' experiences with EMR are more positive with respect to support for completion of routine tasks, learning ability, ease of obtaining patient information and patient data entry
8.	Developing the case managers role function instrumen in the professional nursing care method. (Rahman, Nursalam and Asmoro, 2019)	Design : Research and Development design Sample : 1. The first stage sample is 100 nurses 2. The second stage sample is 14 nurses 3. FGD with 9 participants Variables: Case manager role function instrument Instruments : 1. Stage 1 Medical records n=287 Participants n=9 2. Stage 2 Medical records n=40 Participation n=8 Analysis: Pearson Product Moment Correlation test Cronbach alpha test	1. The results of the study show that all of the function instruments and duties of the case manager at the Banjarmasin General Hospital cannot be evaluated because there are no standardized instruments. 2. The development of case manager function instruments and tasks compiled through FGDs is stated to be valid and reliable with an average of r count>r table (0.195) 3. Most of the test results for filling in the instrument for the case manager's tasks had good abilities (92%) and the quality of the instrument was assessed as good by all case managers (100%)
9.	*Simulated Electronic health Documentation: A Cros-sectional Exploration Of Factors Influencing Nursing Students Intention to Use.* (Chan *et al.*, 2020)	Design: cross-sectional samples: undergraduate nursing students from the Nursing study program at the State University of Malaysia as many as 133 respondents.	The results showed that the aim of this study was to investigate the factors that could influence nursing students' intention to use the iNES simulation web application to practice electronic health documentation. This study found that perceived usefulness was the factor that most influenced students' intention to use the iNES simulation web

NO	Judul dan Penulis	Metode	Hasil
		With inclusion criteria • students who are in their second to fourth years • have participated in and accessed the simulation web application as part of teaching and learning activities during the 2016-2017 academic year variables: Simulation of electronic health documentation is a cross-sectional exploration of the factors influencing nursing student intentions instruments 1. Internally consistent iNES Survey Questionnaire 2. The instrument consists of Perceived Usefulness (7-item), Perceived Ease of Use (6-item), 3. iNE usage motivation questionnaire (20-items) Intention to use (6-items) 4. The response questionnaire uses a 5-point Likert scale with 1 = strongly disagree to 5 = strongly agree. Analysis: 1. Descriptive with t-test 2. Analysis of variance (ANOVA) was used to compare different motivations for using the iNES application during documentation. 3. Data analysis was performed using SPSS (19.0) and AMOS (23.0)	application. To increase students' intention to use simulated EHRs to practice electronic health documentation, alignment of the curriculum with the integration of web-based simulation EHRs and educators' emphasis on students on the usability of the iNES simulation web application will be critical. This study also found that perceived iNES usability was positively influenced by perceived ease of use. It is important to support students' perceived ease of use. It is important to ensure the availability of reliable IT support services with effective internet access for educational nursing. External variables such as lack of IT support and poor internet access can affect students' perceived ease of use negatively. A student's academic year of study could be an external variable that significantly influences perceived ease of use, perceived usability and intention to use iNES. Contextual differences between different academic years of study in terms of courses enrolled and students' academic workload need to be considered. No previous studies related to the use of simulation by nursing students EHRs in the local context, the findings of this study provide direction for the integration of simulated EHRs in nursing education in Malaysia. University management support for the nursing curriculum with simulated EHR integration is essential. In addition to resource allocation for easy-to-use and meaningful web simulation development of EHR applications. This will help future nursing graduates to implement and support EHRs in their workplace.
10.	Nursing documentation practice and associated factors among nurses in public hospitals, Tigray, Ethiopia (Tasew, Mariye and Teklay, 2019)	Design : A quantitative descriptive cross-sectional study design Sample : Respondents 317 nurses of Ethiopian Tigraw General Hospital. Variables: 1. Nursing documentation 2. Factors that influence Instruments : self-administer questionnaire Analysis : 1. SPSS version 22 software 2. Binary logistic regression 3. Bi-variables and multivariable logistic regression	1. Implementation of nursing documentation (1) The results of the questionnaire on the implementation of nursing documentation showed that 151 (47.8%) respondents were in a good category and 165 (52.2%) respondents scored below the average, the implementation of nursing documentation was poor. (2) Out of all nurses, 230 (72.8%) observed nursing notes, a total of 130 (56.5%) said that they did not complete nursing records. (3) Focusing on the documentation system, the majority of 262 (82.2%) nurses rejected computer application-based nursing documentation. 2. Respondents' knowledge of nursing documentation (1) A total of 136 (43%) respondents got a score above the average and or equal to the average (2) A total of 180 (57%) respondents got a score below the average (3) The conclusion is that most of the respondents have less knowledge. 3. Respondents' attitudes towards nursing documentation (1) More than half of the respondents 176 (55.7%) have a good attitude towards the implementation of documentation (2) A total of 140 (44.3%) respondents had a bad attitude towards the implementation of documentation 4. Reasons for poor documentation implementation 1) A total of 128 (40.5%) Respondents who did not carry out documentation every time they provided care to patients 2) A total of 65 (41.9%) respondents reported the reason was lack of time 3) A total of 38 (24.5%) respondents reported the reason was a lack of documentation, 4) A total of 28 (18.1%) reported that the reason was insufficient employees 5) A total of 17 (11%) reported the reason was lack of motivation by the supervisor 6) A total of 7 (4.5%) have no obligation from the institution 5. Factors related to the implementation of nursing

NO	Judul dan Penulis	Metode	Hasil
			documentation of patient care plans. 1) Respondents who are not familiar with nursing documentation standards are more than those who are familiar with documentation standards 2) Nurses who reported less time and less documentation as reasons for poor nursing documentation were more than those who reported sufficient time and documentation.
11.	Nursing Documentation Study at Teaching Hospital in KSA (S. Y. and S., 2015)	Design : A prospective cross sectional method Sample : All nurses, a total of 1140 nurses from King Abdulaziz University Hospital Jeddah K S A Variables: Nursing documentation Instrument : Observation sheet Analysis :	1. A total of 980 nurses carry out direct care of patients and show patient documentation flowcharts/charts 2. A total of 50% (16) units use the flow documentation/focus chart method, 10 units use narration, 6 units use other methods.
12.	*Completion of Electronic Nirsing Documentation of Impatient Admission Assessment: Insight from Australian Metropolitan Hospitals* (Shala *et al.*, 2021)	Design : Adult Admission Assessment (AAA) form competition. Sample: study included 37,512 adult inpatient admissions to 43 clinical units from November 2018 to November 2019. Variables: Admissions to outpatients or community-based facilities, mental health, paediatric, emergency, and maternity settings were excluded. Instruments : Patient and facility characteristics, completion in timelines, factors related to completion Analysis: A nursing admission assessment form is completed for each episode of an inpatient admission. The unit of analysis was inpatient admission, multiple admissions from the same patient were treated independently.	The results indicate that the strength of this study lies in the strong findings generated by strong statistical power, inclusion of multiple clinical areas, and use of multi-level modeling analytical techniques that take into account hierarchies in the data. Its focus on documenting a single nursing process provides better insight into clinical practice than other studies that have looked at electronic nursing documentation as a whole, or focused on physician practice alone. Education of nursing staff about the use of eMR and exercise variations could have influenced the completion of the form, but such information was not available and was outside the scope of this study. Inpatient admission meeting and data for analysis in this case the research comes from the existing ESDM audit reports for the AAA form, so that the variables included for analysis are limited and can be improved. Future studies linking eMR data with reported critical incidents or hazards to address the results of not completing the AAA form recommended. Other patient-related characteristics such as Aboriginality, spoken language, primary diagnosis, or discharge disposition can provide additional insight into factors influencing electronic form filling and assessment of nursing acceptance. This study investigates the timeliness of completing electronics AAAs were established in metropolitan Australian health districts, and factors associated with their completion were identified. Overall, form filling was high and frequently performed within the first 24 hours of hospital admission. Nonetheless, some patients do not have a completed form or form its completion was significantly delayed. Time to enter, long stay, and hours of care per patient day on the unit were factors that were found to influence the completion of AAA. More emphasis needs to be placed about the importance of filling out AAA forms on time, such as this informs initial care planning for inpatients in the hospital. Education among nursing staff, exploration of reasons for filling out delay forms, and standardization of guidelines for nursing admissions and use of eMR are recommended for future practice.
13.	Nurse Motivation, Engagement and Well-Being before an Electronic Medical Record System Implementation: A Mixed Methods Study *International Journal of Environmental Research and Public Health* (Jedwab *et al.*, 2021)	Desain : concurrent mixed-methods design, complementary qualitative (focus group interviews) and quantitative (survey) data were given equal importance to comprehensively examine this complex topic Sampel : The study setting was a large, multi-site tertiary teaching hospital located in Victoria, Australia with approximately 3300 beds over seven major hospitals. The health service provided care across a large geographic area through a mix of in-patient, ambulatory, residential and community health settings. Patient populations included	The survey results used a mixed method simultaneously on 540 nurses (15.5%) 1. Before implementation Interview results of 63 nurses who used EMR revealed: • 32.2% (174) low welfare of nurses 28.7% (n= 155) experienced symptoms of fatigue, • 62.3% (n = 334) reported high job satisfaction and still wanted to continue in their role 34.3% (n = 185) • Nearly half (n = 250) 46.3%) reported intrinsic motivation for using EMR

NO	Judul dan Penulis	Metode	Hasil

		specialist, critical care, acute, sub-acute and community of all ages from neonates, paediatric, adult and the elderly. As of January 2019, the healthcare organisation employed almost 8400 nurses and midwives and had well-established relationships with multiple universities for teaching and research. 2.3
		Variabel :
		1. Nurse Motivation, Engagement and Well-Being before an Electronic Medical Record System
		2. Nurse Motivation, Engagement and Well-Being after implementasion an Electronic Medical Record System
		Instrumen :
		Motivation:
		  1. ACTA (Autonomy and Competence in Technology Adoption)
		  2. Tool dimensions: Perceived Competence and Relative Autonomy Index (RAI) (5-point Likert scale (1 Not all the time–5 Very true)
		Engagement:
		  1. Work Satisfaction single-item measure Psychological Safety Score out of 10 (1–10)
		  2. Intention to Stay (adapted) Tool dimensions: Team Safety 5-point Likert scale (0 Strongly disagree–4 Strongly agree) Work Satisfaction Single-item measure Score out of 10 (1–10
		  3. Work Engagement UWES-3 (Utrecht Work Engagement Scale) Tool dimensions: Vigour, Dedication, Absorption 7-point Likert scale (0 Never–6 Always)
		Well-Being
		  1. Well-Being WHO-5 (Well-Being Index) 6-point Likert scale (0 at no time–5 All of the time)
		  2. Burnout MBI (Maslach Burnout Inventory) Tool dimensions: Exhaustion, Cynicism, Efficiency 7-point Likert scale (0 Never–6 Always)
		Analisis :
		Relationships between variables were examined using bivariate correlations, and Chi-square analyses were used to examine relationships between groups	

14.	Applying the WHO International Classification of Functioning, Disability and Health in Nursing Assessment of Population Health (Gómez-Salgado *et al.*, 2018)	Design : Morse concepts comparison methodology Sample : 1. The internal structure of the documentation 2. Representative documentation 3. Relationship of documentation with other concepts Variables: 1. International Classification of Nursing Practice World Health Organization (ICP WHO) North American Nursing Diagnosis Association (NANDA) 2. Nursing Outcomes Classification (NOC) 3. Nursing Interventions Classification (NIC) 4. International Classification for Nursing Practice (ICPN) Instrument: Observation sheet Analysis : Morse models	Category: the maximum number of codes available is 34 codes at the chapter level, and 362 codes at the second level. The third and fourth levels have more than 1424 codes available which are all full versions of the classification 2. NANDA Year: 2017 Objective: establishing a nursing diagnosis, using a universal language, a classification of diagnoses is formed in the calculation of domains and classes. Structure: domain and class Categories : 244 diagnostic classification on 13 domains and 47 classes (from 2 to 6 classes in each domain) 3. NOC Year : 2016 Objective: identify nursing outcome criteria and evaluate interventions and nursing outcome criteria, establish the relationship between NANDA nursing

NO	Judul dan Penulis	Metode	Hasil
			diagnoses and NIC nursing interventions, nursing classification outcomes are formed according to field and class. Structure : Domain, class, outcome criteria, indicators Category : 6 domains, 24 classes, 490 nursing outcome criteria 4. NIC Year: 2016 Objectives: define nursing interventions/activities and plans to develop and implement these interventions, relate them to NANDA nursing diagnoses, classify nursing interventions according to size and class. Structure : domains, classes, interventions, activities Categories : 7 domains, 30 classes, and 554 nursing interventions. 5. ICPN Year : 2016 Objectives: identify nursing diagnoses, plan nursing interventions, evaluate nursing outcome criteria, use universal language in the delivery of care, classify nursing phenomena, compare data in medical records, promote nursing research Structure : focus, consider, source, execution, time, place, patient. Category : Nursing diagnoses, interventions and outcome criteria are reported using the differences of the 7 structures, a number of concepts interrelated in each structure.
15.	The effects of a mobile application for patient participation to improve patient safety (Lee, Ahn and Lee, 2022)	Design : A quasi-experimental design was adopted Sample : The target population consists of Korean adults who have visited a medical institution in the last 6 months. The inclusion criteria are as follows: 1. an adult between the ages of 30 and 65 who has visited a medical institution more than once in most of the past 6 months 2. who agreed to participate in the research and provided signed informed consent online; and who have cell phones capable of receiving text messages and who use them 3. Adults working in medical institutions and providing health services as health care providers were excluded, because they felt they could represent a biased view of participation. Sample size is calculated using . Variables: 1. The effects of a mobile application for patient participation 2. The effects of a mobile application to improve patient safety Instruments : 1. Application for Patient Participation in Safety Enhancement (APPSE) four main components: Introduction, Safety Educational Materials, Asking questions, listening to my medications, dealing with patient safety activities. 2. structure of the SAFE educational content for 12 patient safety topics and the components of the APPSE. 3. heuristic checklist based on Nielsen's 10 heuristic principles (consistency, metaphor, visibility, efficiency, memory, freedom, minimalism, aesthetics, error prevention, helpfulness) with a 5-point scaleNielsen's heuristics are broad rules of thumb widely 4. A questionnaire consisting of 10 items about	A total of 131 participants were randomly assigned to the intervention group (n = 87), control group (n = 44) Overall, 97 participants (74.0%) completed the post-survey. 1. Primary outcomes Among the results of the post-survey data comparison between the intervention and control groups, the intervention group had significantly higher scores overall than the control group with respect to patient safety knowledge (U = 646.00, p < .001), participation self-efficacy (U = 679.00 , p = .001), willingness to participate (U = 767.50, p = .010) and experience of participation (U = 833.00, p = .038; Table 3). Compared to the control group, the patient safety activities with significantly higher scores on both self-efficacy and volition were 7 activities among 13 activities (FDR < 0.2) 2. The average total score of end user satisfaction is 3.56 ± 0.60. Three categories of high scores are accuracy (3.71 ± 0.77), content (3.64 ± 0.54) and format (3.60). ±0.70). The mean category ease of use and timeliness scores were 3.26 ± 0.97 and 3.53 ± 0.71, respectively. Of the participants, 95% used the system at least once a week. All participants used APPSE through mobile or web applications, and the majority of participants (90.0%) used mobile phones or tablet PCs to utilize the application. Responses to the most useful functions in the system were 'SAFE educational materials' (36.7%), 'List my medication' (23.3%) and engage in patient safety activities' (18.3%)

NO	Judul dan Penulis	Metode	Hasil
		the perception of patient safety with a 5- point Likert scale (1 = disagree strongly, to 5 = agree strongly) developed by An et al. Analysis : Analysis phase (needs assessment and literature review) T 1. For the statistical analysis, the IBM SPSS V.24. 2. primary outcome variables at baseline between the intervention group and the control group were analyzed using the independent t-test and χ2 test. 3. For the comparison of primary outcome variables after the intervention, Mann–Whitney U tests 4. the false discovery rate (FDR < 0.2) procedure42 was carried out to adjust for multiple tests	

Table 2 shows the results of the analysis of statistical test factors related to post-disaster mental-emotional disorders. Statistical test results showed that sex was not associated with mental-emotional disorders because the Chi-square results obtained were p = 0.352. Factors related to post-disaster mental-emotional disorders based on statistical test results are communities who were 17-25 years (OR = 0.05; 95% CI = 0.005 - 0.491), communities with moderate category of residence damage (OR = 0.313; CI95% = 0.115 - 0.856), communities with family members died or injured from earthquake (OR = 2,575; CI95% = 1,073 - 6,177), and communities who did not get residence compensation (OR = 2,616; CI95% = 1,228 - 5,577).

IV. DISCUSSION

The results of the article research show that there are 15 articles that match the criteria specified by the author. The factors that influence the documentation of nursing work are the knowledge and skills of nurses, standard nursing process training, use of basic nursing language, use of standard nursing functions, relationship between nurse and patient and work atmosphere. , facilities, organizational management, management models, continuous assessment of care documentation and hospital accreditation. These factors can improve the quality of nursing documentation if implemented, evaluated, and improved so that the quality of nursing services increases.

One of the factors influencing the documentation of nursing work is standardized nursing language (SNL), the standard nursing language, attempts to create consistency in the words used by nursing staff in the creation of nursing jobs. Using standardized nursing language is a factor promoting the quality of nursing work such as continuous nursing communication and continuous data documentation, enhancing patient and provider safety. Nursing work allows goal-oriented planning and good results and evaluation. Nursing documentation literature study shows the quality of documentation that indicates the level of care provided. Knowledge and skills of nurses. The preparation of medical documents is lacking and there are errors in nursing documentation.

V. CONCLUSION

Factors that affect the quality of nursing documentation include hospital management, infrastructure, patient organizations, work environment. With the existence of factors that support one another, nursing documentation can be carried out properly.

CONFLICT OF INTEREST

There is no conflict of interest

ACKNOWLEDGMENT

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Feeding Pattern with Stunting Incidence in Toddler 12-59 Months at Primary Health Care X, West Sumatera

Syalvia Oresti [1], Febry Handiny [1], Elfita Rahmi[2*]

Abstract--- Background: Stunting is a condition of chronic malnutrition brought on by a lack of nutrient intake. If it is not treated properly, it will result in sub optimal growth, experience difficulties achieving optimal physical and cognitive development, have suboptimal levels of intelligence, are more susceptible to disease, and have decreased productivity. The highest prevalence of stunting will reach 26.9% in 2022. The purpose of this study was to determine of feeding patterns and the incidence of stunting in children aged 12-59 months.Methods: A quantitative analytic descriptive approach was used for the study. Between March and August 2022, this study was carried out at Primary Healthcare X. 70 participants were selected as samples using the incidental sampling method. Children with specific dietary allergies and genetic diseases were excluded from this study, while mothers with kids aged 12-59 months. The variables of this research are Feeding practice and Stunting. Frequency distributions of the data were univariately, and the Chi-Square test was used to assess the data bivariately.Results: The findings revealed that 68.6% of the feeding habits were improper, and 62.7% of the prevalence of stunting was quite short. There is a relationship between feeding patterns and the incidence of stunting in children aged 12-59 months with a p-value of 0.001 (p<0.05).Conclusions: It is hoped that all nurse and health worker can mobilize the community according to the right feeding pattern so that stunting does not occur in Toddler at Integrated Services Post.

Keywords-- *Feeding practice, Stunting, Toddler*

I. INTRODUCTION

Indonesia Stunting is a condition of chronic malnutrition brought on by a lack of nutrient intake. If it is not treated properly, it will result in sub optimal growth, experience difficulties achieving optimal physical and cognitive development, have suboptimal levels of intelligence, are more susceptible to disease, and have decreased productivity. The highest prevalence of stunting will reach 26.9% in 2022. The purpose of this study was to determine of feeding patterns and the incidence of stunting in children aged 12-59 months.

II. METHOD

The purpose of this study was to determine Feeding Pattern with Stunting Incidence in Toddler 12-59 Months at Primary Health Care X. The incidence of stunting is the dependent variable and the feeding pattern is the independent variable. This study was carried out at Health Center X between March and August 2022. An analytical study using a retrospective study design characterizes this kind of research. Data was gathered between June 13 and June 27, 2022. All women with children under the age of five who were between the ages of 12-59 months at Puskesmas X made up the population for this study, which had a total sample size of 70 participants. Accidental sampling was used to choose the sample. Interviews and direct

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measurements of respondents' heights were used to get the data and processed by univariate and bivariate analysis using the chi-square test with a p-value of 0.001 (p<0.05).

III. RESULT

Univariate Analysis

Table 1 Distribution of Stunting Frequency in Children Under the Age of 12-59 Months

Stunting	f	%
Very Short	44	62. 7
Short	26	37.3
Sum	**70**	**100**

Table 1 shows that out of 70 respondents, there were 44 respondents (62.7%) of *very short stunting* incidence in toddlers aged 12-59 months.

Table 2 Frequency Distribution of Feeding Patterns in Children Aged 12-59 Months

Feeding patterns	f	%
Improper	48	68.6
Proper	22	31.4
Sum	**70**	**100**

Table 2 shows that out of 70 respondents there were 48 respondents (68.6%) improper feeding patterns in toddlers aged 12-59 months.

Bivariate Analysis
Table 3 Relationship between Feeding Patterns and the Incidence of *Stunting* in Children Under the Age of 12-59 Months

Feeding patterns	Stunting				Sum		p value
	Very Short		Short				
	f	%	f	%	f	%	
Improper	34	80	14	20	48	100	
Proper	10	25	12	75	22	100	**0,001**
Sum	**44**	**62.7**	**26**	**37.3**	**70**	**100**	

Table 3 shows that of the 44 respondents, the incidence of *stunting* that is very short is 34 (80%), higher than that of the right feeding pattern 10 (25%) in toddlers aged 12-59 months. The results of the *Chi-square* test obtained a *p-value* of 0.001, so it can be concluded that there is a relationship between feeding patterns and the incidence of *stunting* in children aged 12-59 months.

IV. DISCUSSION

Stunting Incidence in Toddler 12-59 Months

According to the study's findings, 44 responders (62.7%) out of the 70 participants had very short stunting in infants between the ages of 12 and 59 months.

The findings of this study are consistent with Setianingrum's (2020) investigation into the variables influencing the prevalence of stunting in children aged 12-59 months. According to the study's findings, 78.4% of children at the Kuta Alam Health Center between the ages of 12-59 months were stunted.

The most accurate proximal indicator of child health inequities may be stunting. This is because different aspects of a child's health, development, and surroundings are described by the term "stunting." This anthropometric measure can therefore

be used to indicate unfavorable environmental circumstances and and long-term restrictions on children's growth potential (WHO, 2016).

The prevalence of very short stunting is brought on by young children's poor nutrition and their history of low birth weight. The prevalence of stunting is also a result of a number of other factors, particularly the respondent's parents. In particular, the mother's education level, which is still predominately low, contributes to her lack of understanding and her inability to give toddlers with proper nutrition. Low family income because it is harder to meet nutritional demands, especially for toddlers, the lower the family income. Male toddlers account for 51% of the incidence of stunting in toddlers, while women who did not attend school account for 3.9% of the incidence of stunting in toddlers, according to the study.

Because the growth spurt period for girls begins earlier than for boys (the average age for girls is around 10 years old and the average age for boys is around 12 years old), stunting is more common in boys. This time frame may make up 15–25% of adult height. Height growth slows and eventually stops after the growth surge period.

Feeding Pattern in Toddler 12-59 Months

According to the study's findings, 48 respondents (68.6%) out of the 70 respondents had an improper eating schedule for toddlers between the ages of 12-59 months.

The findings of this study corroborate those of Wahyanti's research from 2021, which was titled "The relationship between feeding patterns and stunting in children aged 12-59 months." The study's findings showed that 62.2% of children aged five to 59 months at the Antang Perumnas Health Center had irregular feeding patterns, which is more than half.

Consuming food and beverages will have an impact on one's degree of health. For healthy development of the physical and mental faculties in newborns, children, and people of all ages, optimal nutrition is necessary. Physiological, psychological, cultural, and social factors all influence how we eat (Waryono, 2014).

The questionnaire's analysis yielded the lowest score, which was 48% on the question "I give children foods that contain protein (meat, fish, soybeans, eggs, nuts, milk)," 48% on the question "I give my children to eat with animal side dishes (meat, fish, eggs, etc.) 2-3 pieces per day," 48% on the question "I feed my child with vegetable side dishes (tofu, tempeh)," 48% on the question "I give my child to eat".

The mother's diet does not follow the recommended diet since she does not offer a daily diet that consists of three main meals (morning, afternoon, and evening) and two snacks. Stunting can occur in toddlers with the correct diet for a variety of reasons, such as moms who did not exclusively nurse their infants for two years or who had a history of LBW, which gives toddlers the chance to suffer stunting.

Feeding Pattern with Stunting Incidence in Toddler 12-59 Months

According to the study's findings, a p value of 0.001 (p 0.05) indicates that there is a connection between feeding habits and the prevalence of stunting in toddlers between the ages of 12-59 months.

The findings of this study are consistent with those of Wahyanti's study from 2021, which found a 0.000 p-value association between feeding habits and the prevalence of stunting in children aged 12-59 months at the Antang Perumnas Health Center. According to the study's findings, the frequency of stunting was highly correlated with the eating pattern.

According to this study, there is a connection between feeding habits and the prevalence of stunting since many moms still lack knowledge about toddler nutrition and merely give food to their children without considering its nutritional value. Additionally, toddlers frequently purchase snacks from vendors outside because eating snacks makes them feel full and prevents them from wanting to eat their mothers' prepared meals. However, if the mother is knowledgeable enough about nourishing foods for toddlers according to the toddler's age, this unhealthy eating pattern can be avoided. The mother's diet does not follow the recommended diet since she does not offer a daily diet that consists of three main meals (morning, afternoon, and evening) and two snacks. This may have an impact on toddlers' dietary intake and their ability to meet their nutritional demands.

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V. CONCLUSION

According to the findings of the study on the correlation between feeding habits and the incidence of stunting in children aged 12-59 months, there is a correlation between feeding habits and the incidence of stunting in children aged 12-59 months, with a p-value of 0.001 (p0.05) in Toddlers Age 12-59 Months.

CONFLICT OF INTEREST

All authors declared no competing interests in the study.

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Factors Associated The Quality Of Life Of Children With Thalassemia: A Systematic Review

Wuri Utami[1], Mohd Nazri[1], Khalid Mokti [2*]

Abstract--- *Thalassemia is a blood disorder that is passed from parents to their children. Patients should receive regular blood transfusions. Children with thalassemia will be on medication for a long time. These extreme impacts cause various physical, emotional, social and environmental disorders that can reduce the quality of life of patients with persistent thalassemia major. This study aimed to identify factors that contribute to quality of life in children with thalassemia major. The researcher conducted investigation from 2017-2023 and involved exploration of some scientific papers journal from ScienceDirect, NCBI and, PubMed as references with keywords nursing discharge quality of life , thalassemia Major, Child, and Peds-QL. This paper identified 10 relevant research articles from 349 original full texts between 2017 and 2023 and analyzed inclusion criterion population, children with thalassemia major. As a result, based on 10 articles that have been analyzed showed that scores on all dimensions of PedsQL covering physical, psychological, social and school domains among children with thalassemia were lower than in the healthy group. Factors contributing to quality of life among children with thalassemia major according to this literature are chelation therapy, frequency of transfusion, age during first transfusion, age during first transfusion, age of child, family income, parental upbringing and ferritin level. Conclusion; The support of family and friends, as well as providing adequate education for parents is very important in improving the quality of life of thalassemia children.*

Keywords-- Quality of life ; Thalassemia major

I. INTRODUCTION

Thalassemia is a genetically inherited blood disorder characterized by the absence or decreased synthesis of one or more of the globin chains in the hemoglobin molecule that causes high mortality in children and causeshigh mortality in children, chronic anemia. The diagnosis of thalassemia has been shown to affect the quality of life of patients [16]. Indonesia is one of the countries with a high risk of thalassemia. [9] The prevalence of thalassemia major in Indonesia and based on data from the Hematology Skills Competency Test of the Indonesian Pediatric Association in 2016, reached 9,121. Based on data from the Indonesian Thalassemia Foundation / Parents Association of Thalassemia Patients, thalassemia sufferers in Indonesia have increased from 4,896 people in 2012 to 9,028 people in 2018.

Physical alterations associated with diseases such as growth retardation, pallor, muscle hypotrophy, hepatosplenomegaly and bone deformities caused by bones expanding the marrow (for example, deformities of the craniofacial region or mongoloid face [12]. Complicationscan further affect a child's ability to function normally. The child's daily routine and attendance to school can also be disrupted with frequent hospital visits for blood transfusions, long infusion hours for iron chelation therapy and fatigue caused by anemia [15]. Physical changes and weaknesses that occur in thalassemia sufferers have psychosocial impacts on children, such as low self-esteem, shyness, helplessness, and withdrawal from the social environment [16].

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Based on the above background, researchers want to know the factors related to the quality of life of children with thalassemia major against each dimension of life. Therefore, an analysis is needed by identifying factors related to the quality of life of children with thalassemia mayor.

II. METHOD

Search strategies

We searched for articles published from 2017 to 2023 using PubMed, ScienceDirect, and NCBI as databases. We entered keywords by using the terms Quality of life, thalassemia major and child. At the beginning of the search, reviewers search extensively to take as many articles as possible to get relevant articles. Search results in the form of titles and abstracts are the responsibility of the author to read and select articles that are relevant to the criteria set by the author

Selection criteria

The inclusion criteria of the articles are: 1) Population, children with thalassemia major aged 6-18 years; 2) Quality of life measured using Pediatrics Quality of Life (PedsQLTM) 4.0 3) Results, articles containing quality of life that include four specific dimensions of quality of life such as physical function, emotional functioning, social functioning, and school function in children with thalassemia major; 4) Study design, cross-sectional, case studies, and experimental studies; 5) Year of publication, 2017-2023; 5) English Language

Data extraction

The search results obtained articles according to keywords, obtained as many as 349 articles that matched the keywords (Pubmed: 21, Science Direct: 321, NCBI: 7). A total of 15 are duplicate articles. The articles were then filtered by title, and as many as 310 were excluded. Through abstract screening, 13 articles were excluded because they involved respondents with thalassemia minor or those suffering from thalassemia intermedia. The remaining 1:0 articles are eligible for judging. Seven of the articles obtained were cross-sectional studies. The remaining articles are case-control studies. The article selection process is also shown in the following flow chart.

III. RESULT

Selection of Studies

The search results obtained articles according to keywords, obtained as many as 349 articles that matched the keywords (Pubmed: 21, Science Direct: 321, NCBI: 7). A total of 15 are duplicate articles. The articles were then filtered by title, and as many as 310 were excluded. Through abstract screening, 13 articles were excluded because they involved respondents with thalassemia minor or those suffering from thalassemia intermedia. The remaining 1:0 articles are eligible for judging. Seven of the articles obtained were cross-sectional studies. The remaining articles are case-control studies. The article selection process is also shown in the following flow chart.
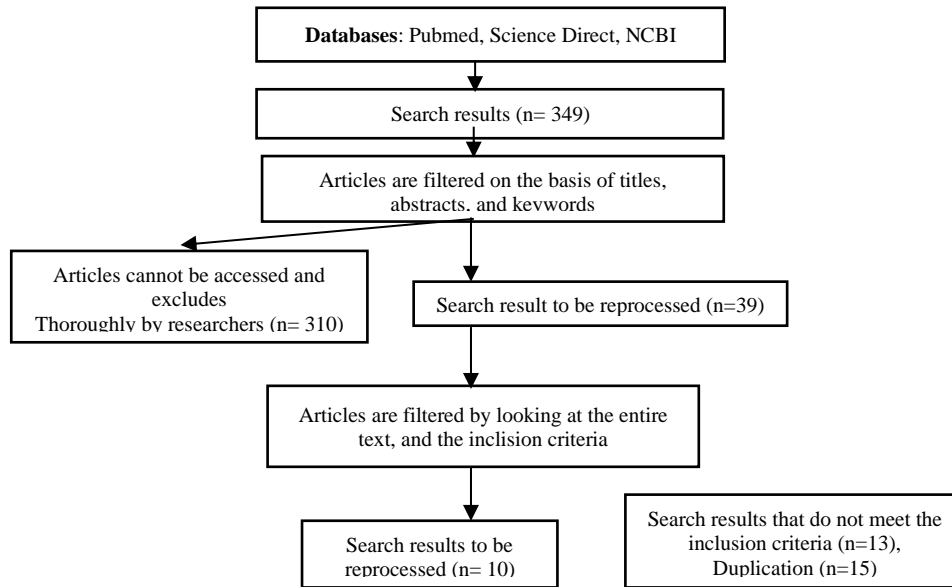
Figure 1. Literature search flow

Table 1: General characteristics of subject study (n = 10)

Category	n	%
Year of publishing		
2017	2	20.00
2018	1	10.00
2019	1	10.00
2020	1	10.00
2021	2	20.00
2022		
2023	3	30.00
Participants' ages		
Children	9	90.00
Adults	1	10.0
Type of study		
Descriptive research	10	100.00

Based on the research subject, we found the number of respondents was 1816 respondents with details of children and adolescents. Based on the research design, we found ten quantitative studies with the type of descriptive studies. For data sources, the questionnaire is the instrument used from the teen articles with PedsQL 4.0.

From the teen journals, we found that the analysis tests used were Pearson correlation coefficient, independent-samples t-test, SEM, ANOVA, Mann–Whitney, multiple logistic regression, and Chi Square.

Outcomes Measure

From the results of a review of teen articles it was found that the the quality of life function of children with thalassemia in all studies was significantly lower than that of healthy children and older sufferers [15]. All studies also showed scores on all dimensions of PedsQL among children with thalassemia were lower than those of the control group. This is in line with previous research that proves that all important aspects of children's quality of life such as physical function, social functioning, emotional functioning, and school function in children with thalassemia are lower than healthy children [7]. Thalassemia not only affects the physical aspect but also the psychosocial aspect of the sufferer (13).

Otherresearch showed that the school function of children in the thalassemia group had the lowest scores among the four dimensions. Which proves that the academic function of children with thalassemia has the lowest grades. This can be caused by

symptoms of chronic anemia that cause children to get tired quickly, lose energy while studying at school, and difficulty understanding lessons [2].

IV. DISCUSSION

Chelation Therapy

Children who receive chelation therapy have better physical function than those who do not and had higher quality of life scores than those who did not receive chelation therapy regularly [2]. Excess iron stored in the heart, liver, or pancreas causes various complications, such as congestive heart failure, arrhythmias, and cirrhosis of the liver, which can be life-threatening.

Transfusion Frequency

Transfusion frequency was significantly associated with physical functioning, psychosocial health, and quality of life. Higher the transfusion frequency per year, the lower the psychosocial function. This is because children often miss school, and indirectly affect the quality of life of children. Cooperation between parents, schools, health services, and the government is needed to facilitate the education of children with thalassemia [5].

Age during the First Transfusion

Age during the first transfusion was significantly correlated with physical function. The older children receive the first ttransformation, the better their physical function [5]. C hildren who received their first transfusion before the age of four had a lower total quality of life score than those who received their first transfusion after the age of four. This means the younger the child receives the first transfusion, the earlier the onset of anemia, which requires the body to receive an external supply of red blood cells [8].

Child Age

The studies analyzed in this review showed that the younger the children, the significantly better the quality of life including emotional functioning, social functioning, and school functioning compared to older children [15]. Age above six years is in the transition period from the developmental age of preschool to school. Thus, they begin to worry about their academic ability and their absence from school. Children are increasingly aware of physical differences and their dependence on blood transfusions. These factors cause them to have negative self-esteem, feel sad and frustrated towards their illness which causes them to withdraw from the environment. Based on this review, the importance of psychosocial support for children with thalassemia is needed to improve their psychosocial well-being and quality of life.

Family Income

Family income is significantly correlated with psychosocial functioning. Children with thalassemia need regular medical expenses and to provide a more decent life for children who need special care as well as to be able to support the child's health needs optimally [1].

Parent Education

Theupbringing of parents, especially mothers, was significantly correlated with the child's quality of life and social fu nctioning. A child with an educated mother has a better quality of life than a child with an uneducated mother [4].

Educated parents tend to have awareness and concern for children's diseases and necessary for them, and they can motivate the child to adhere to treatment and reinforce the vital role of parents as a factor to improve the well-being of children with chronic diseases such as thalassemia. Childrenwhose parents are knowledgeable about the disease as well as have a high awareness regarding the importance of health care for sick children, have better physical functioning Parents will also have the motivation and strength to provide regular care for their children to promote their physical function optimally. Thus, it can be concluded from these findings that local health services are expected to provide health education programs to parents every time they visit health facilities. So that parents get proper knowledge about diseases and treatments needed by children.

Serum Ferritin Levels

High serum ferritin levels were significantly associated with low social functioning. A thalassemia child with a serum ferritin level of 2500 m g / dl had lower social function compared to children who had a serum ferritin level of <2500 ng / dl.

The serum ferritin level reflects the level of iron in the body. High serum ferritin levels can increase the risk of organ damage and are associated with high morbidity and mortality. Complications due to high serum ferritin levels will cause the patient's inability to interact with the environment to be more limited, thus affecting the patient's social functioning [5].

Many factors affect the quality of life of children with thalassemia major. It is hoped that the results of this study will be the basis for determining strategies in improving the quality of life of children with thalassemia involving parents, health services, schools, and the government.

V. CONCLUSION

Factors contributing to quality of life among children with thalassemia major according to this literature are chelation therapy, frequency of transfusion, age during first transfusion, age during first transfusion, age of child, family income, parental upbringing and level Ferritin. This review informs the need to develop strategies to improve the quality of life of children with thalassemia major involving parents, health services, schools, and government.

CONFLICT OF INTEREST

No conflict of interest has been declared

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Table 2; Summary of studies on

No	Title, author, year	Research model (design, sample, variables, instruments, analysis)	Result
1	Health-Related Quality of Life and Related Factors Among Thalassemia Major Patients, Southeastern Iran. (Bazi, *et al*., 2017)	D: Cross sectional S: 80 respondents V: - Independent: quality of life - It depends: Thalassemia major I: Peds-QL Questionnaire A: Bivariate and descriptive analysis	1. Lowest score: social domain, 2. Highest score: emotional domain. 3. Other related factors include: female gender, poor adherence to chelation therapy, and residency in urban areas were significantly associated with poor quality of life 4. Conclusion: Providing mental health packages appears to be particularly important for improving quality of life in thalassemia patients, especially in the social sphere.
2	Health-related quality of life in pediatric and adolescent patients with transfusions in ß-dependent thalassemia in upper Egypt. (Hakeem, G. L. A *et al*., 2018)	D: Case control S: 64 respondents V: - Independent: quality of life in childhood and adolescence - It depends: Thalassemia major I: Peds-QL Questionnaire A: Bivariate and descriptive analysis	1. Lowest score: social domain, emotional,psychological at age older 2. Other related factors include: High serum ferritin, age and length of transfusion significantly related with a social quality that bad . 3. Conclusion: Scheduled programs that provide psychosocial assistance and connecting networks between patients, school officials, thalassemia caregivers and doctors are needed especially in developing countries where health services are not integrated with social organizations. Special school services for thalassemia patients are needed to deal with repeated absenteeism and anemia caused by low psychological factors of thalassemia children.
3	Predictive factors have an impact on the quality of life of school-age Thalassemic children in Indonesia. (Mediani *et al*., 2021)	D: correlational- Cross sectional S: 55 respondents V: - Independent: quality of life of school age - Dependents: Thalassemia children I: Peds-QL Questionnaire A: Bivariate and descriptive analysis	1. The results showed that: Transfusion frequency, status nutrition, family support, Friend support and compliance Against Iron Chelation Therapy is the most important factor Predicting Which affects quality Live ChildThalassemia A Age school. 2. It is suggested that effective transfusion scheduling, family and friend support, and providing adequate education for parents are essential in improving the quality of life of QOL thalassemic children in Indonesia
4	Health-Related Quality of Life and Child Related Factors with Thalassemia dependent transfusion in Dubai, USA. (Alshamsi *et al*., 2021)	D: Descriptive cross sectional S: 68 respondents V: - Independent: quality of life Thalassemia - Depends: Transfusion dependent I: Peds-QL Questionnaire A: Bivariate and descriptive analysis	1.Lowest score: Physical Domain, Cosocial PSI on older age. 2. Another factor: lower monthly household income correlates with lower psychosocial health
5	Epidemiological study of quality of life of children with beta-thalassemia major (β-TM) and its correlation in Kolkata, West Bengal, India	D: Descriptive cross sectional S: 328 respondents V: - Independent: Thalassemia - It depends: quality of life	Factors related to quality of life: Educationlevel, employment status of parents, place of residence, family history of illness, blood

	(Biswas, *et al.*, 2023)	I: Peds-QL Questionnaire A: Bivariate and descriptive analysis	transfusion frequency, pre-transfusion Hb levels, and nutritional status and comorbidities
6	A Study to Compare the Quality of Life of a healthy child and a child with Thalassemia in India (Jay, et al., 2017)	D: Comparative study S: 56 respondents V: - Independent: Children with thalassemia -It depends: Quality of life I: Peds-QL Questionnaire A: T test	The results showed: PedsQL (Physical, Emotional, Social and School Functioning) domains of thalassemia patients are statistically significantly lower than healthy children
7	Health-related quality of life among children with transfusion-dependent thalassemia: A cross-sectional study in Malaysia. (Shafie, *et al*., 2020)	D: Cross sectional S: 368 respondents V: -Independent: Quality of life among adolescents -It depends: thalassemia I: Peds-QL Questionnaire A: Bivariate and descriptive analysis	School function scores have the lowest average scores in the psychosocial dimension.
8	Factors affecting health-related quality of life (HRQoL) in Pakistani children with thalassemia. (Batool *et al*., 2022)	D: Cross-sectional observation S: 178 respondents V: -Independent: Factors affecting health -It depends: Quality of life I: Peds-QL Questionnaire A: Bivariate and descriptive analysis	1. Lowest score: school function domain, domain emotional, the domain of physical functioning and health function score general. 2. Other factors: Age, rural residence, as well as serum ferritin, urea and AST levels. 3. The recommendation from the results of this study is the need for improvements in thalassemia treatment management, including modification of health services to improve quality of life, and thus increase the percentage of treatment outcomes in thalassemia a patients.
9	Quality of life in children with beta-thalassemia major: a cross-sectional study in China (Song *et al.,* 2022)	D: Cross sectional S: 519 respondents V: -Independent: Quality of life -Dependent: Beta-Thalassemia major I: Questionnaire Peds QL A: Bivariate and descriptive analysis	1. High score: Younger age, without complications, with a shorter course of disease, with lower levels of caregiver burden, and receiving transplant care were all associated with higher performance of physical, emotional, social, and school functioning. 2. Lowest score Health-related quality of life as rated by PedsQL score in Chinese children with β-TM lower than previous research.
10	Factors affecting quality of life in children and adolescents with thalassemia in Iraqi Kurdistan. (Mikael*., et al*., 2018)	D: case-control study S: 100 respondents V: -Independent: Factors affecting quality of life in children and adolescents - Dependent: Thalassemia I: Quesioner peds QL A: Pearson correlation, Chi-square, and t-test	1. Lowest Score : physical function. 2. Other factors: transfusion ≥6 / year, with hepatitis C infection, with illiterate parents, and Those who use oral iron flatfoot.

Comparison of Wound Care Protocols in Diabetic Foot Ulcer in Efforts To Speed Up The Wound Healing Process: a systematic review

M. Zainnur Hafid[1], Mira Triharini[1], Ika Yuni W[2*]

Abstract--- Introduction: Management of diabetic ulcer wounds is very important because it involves the comfort of diabetic patients in carrying out their daily lives. Previous research stated that wound care methods greatly affect the acceleration of wound healing which will later affect hospital services so that the purpose of this article will analys the effectiveness of treatment protocols for accelerating wound healing resulting in an increase in hospital services.Methods: This study design uses a systematic review to identify relevant research articles. The keywords used in the article search were adjusted to the Medical Subject Heading (MeSH), using the Scopus, ScienDirect and ProQuest databases. Article search is limited to article publications for the last 5 years (2018-2023) and in English. Article feasibility is assessed using the PICOS framework Results: 15 articles using wound care interventions in cases of diabetic foot ulcers. The intervention of diabetic foot ulcer use in the 3 interventions analyzed in wound care protocols includes modern dressings, ozone therapy, negative pressure wound therapy. Conclusion: Wound care protocols such as modern dressings, ozone therapy, negative pressure wound therapy can be used as a method that accelerates wound healing compared to conventional methods so that selecting the right wound healing method can improve the quality of life of diabetic foot ulcer patients and reduce complications that occur due to diabetes.

Keywords-- Diabetic Foot Ulcer; modern dressing; Ozone therapy; negative pressure wound therapy

I. INTRODUCTION

Diabetic foot ulcers are open sores on the skin surface caused by macroangiopathy resulting in vascular insufficiency and neuropathy. According to the WHO and the International Working Group on the Diabetic Foot, a diabetic foot ulcer is a condition where there is an ulcer, infection and/or tissue damage, which is associated with neurological disorders and peripheral vascular disease in the lower extremities. (Patel et al., 2019). So it can be concluded that diabetic ulcers are open wounds that occur on the feet of DM sufferers caused by repeated pressure on the feet and are accompanied by peripheral neuropathy, foot deformities and the development of infections which often complicate healing due to reduced arterial circulation. (Turns, 2018). It is very important to pay attention to wound management in diabetic ulcers because it involves the comfort of diabetic patients in carrying out their daily lives. Foot ulcers in diabetics if left too long will cause other complications that can be life threatening (Mavrogenis et al., 2018)

The International Diabetes Federation (IDF) shows that around 425 million people worldwide suffer from DM in 2017. The largest number of DM sufferers are in the West Pacific region, 159 million, and Southeast Asia, 82 million. China is the country with the most DM sufferers in the world with 121 million, followed by India with 74 million, then America. United

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States with 30.1 million, then Brazil with 12.5 million and Mexico with 12 million people (Federation, 2021). An observational study of diabetics at the Nigerian State Regional Hospital showed that 336 patients had diabetic foot complications and experienced permanent disability. (Ugwu, 2019). In Indonesia, it ranks sixth in the number of DM sufferers worldwide, with a total of 10.3 million people (Putri, 2020). The prevalence of risk and diabetic foot ulcer (DFU) in Indonesia is estimated to be high, because DM patients who are not diagnosed are also high. In Indonesia, mortality and amputations are still high at 16% and 25% respectively (Wintoko, Dwi and Yadika, 2020).

The modern method used is TIME namely Tissue Management, Infection on Inflammation Control, Moisture balance, Epitelization advance management. (Koujalagi et al., 2020). It is hoped that this modern wound care management protocol can accelerate the wound healing process in diabetic ulcers in patients with diabetes mellitus. Wound care with modern methods is a method of wound care that focuses on healing moist wounds through occlusive and closed techniques. The general principle of modern wound care is to prepare the wound bed for infection, foreign bodies or dead tissue to become red with a good epithelialization process (Mat Saad, Khoo and Halim, 2018)

Choosing the right method for treating wounds in diabetic ulcer patients is expected to improve the wound healing process and increase the comfort of diabetic patients with diabetic ulcers and reduce the risk of complications.

II. METHOD

Study Design

The design of this study uses a systematic review. The preparation of this systematic review is based on literature studies from various electronic databases, including Scopus, ScienDirect and ProQuest databases by conducting a comprehensive review using the PRISMA guidelines as a guide in making articles related to the effectiveness of wound care methods in accelerating the wound healing process. complaint management in improving hospital quality. The keywords used are "Conventional Modern", "Diabetic Ulcer", "Modern Dressing", "Wound Conditions"

Population, Sample, and Sampling

The strategy used in selecting articles is to use the PICOS framework. This research found that several hospitals carried out wound care procedures including using modern dressings, ozone therapy, negative pressure wound therapy.

Instruments

The instrument used is a journal accessed from an existing database. Data collection techniques in this study the authors will identify from relevant journals accessed through databases including Scopus, ScienDirect and ProQuest

Procedure

The preparation of a systematic review uses four steps, namely identification of journals, selection of the quality of the assessment report, abstraction in the form of qualifications from the results of each combined study, analysis, namely the combination and reporting of the results of a systematic review.

Data Analysis

The data analyzed is library research data from journals taken from four databases, namely the Scopus, ScienDirect and ProQuest databases. The method of analysis in this systematic review is descriptive by explaining through narration the results of the research described in the source. The narrative approach is carried out with the main objective of gathering evidence of the effectiveness of wound care procedures in accelerating the wound healing process.

Ethical Clearance

This research does not require ethical testing.

III. RESULT

The results of the literature search found 15 articles that fit the systematic review. The literature search that has been analyzed is as follows:

Tabel 1. Summary Search Results Study Articles Systematic Review

No	Judul	Metode DSVIA	Hasil
1.	*Australian guideline on wound healing interventions to enhance healing of foot ulcers: part of the 2021 Australian* *Evidence based guidelines for diabetesrelated foot disease* (Kaminski *et al.*, 2022)	*D : The improve model* *S : 30 methode wound healing* *V : wound healing* *I :guideline wound healing* *A : Exploratory.*	The IWGDF guidelines for wound healing interventions have been adapted to suit the Australian context, and in particular for people who are geographically remote and Aboriginal and Torres Strait Islander. These new national wound healing guidelines, supported by ten national peak agencies, also highlight important considerations for implementation, monitoring, and future research priorities in Australia.
2.	*Current concepts for the evaluation and* *management of diabetic foot ulcers* (Mavrogenis *et al.*, 2018)	**D :** *Cross-sectional- random sampling technique.* **S :** - **V :** *management of diabetic foot ulcers* **I :** *Questionnaire* **A :** *SEM- PLS*	Optimal management of the patient with DFU must include clinical awareness, adequate blood glucose control, periodic foot inspection, special therapeutic footwear, unloading in high-risk patients, local wound care, diagnosis and control of osteomyelitis and ischemia.
3.	*Healing of Diabetic Foot Ulcers in Patients Treated at the* *Copenhagen Wound Healing Center in 1999/2000* *and in 2011/2012* (Sørensen *et al.*, 2019)	**D :** *retrospektif deskriptif* **S :** pasien diabetes **V :** *Wound healin* **I :** *Questionnaire* **A :** *chi square*	The median healing time for diabetic foot ulcers is quite long, around 6 months and with a height recurrence rate in 1999/2000 and 2011/2012. Several factors were found to be significantly associated with healing time, and These coping interventions can increase the time to healing, although such interpretation must be taken with caution this study and should be proven in a randomized prospective intervention trial
4.	*The effect of using modern dressings on the healing process of diabetic wounds in the clinic* *Asri Wound Care Center Medan* *2019 year* (Wicaksana, 2019)	**D : Cross-sectional** **S : 30 diabetic patients** **V: modern dressing, diabetic ulcer** **I : Questionnaire** **A : Shapirowilk**	The results of this study prove that there is an effect of modern wound dressings on the healing process of diabetes mellitus wounds and also that treatment must be carried out routinely according to the wound care schedule. It can be concluded that the average wound healing process before and after the use of modern dressings has decreased. Where the average before is 34.5 and after 26.9. the mean difference was 7.6 with a difference of 5.9 to 9.9 (95% confidence interval of the difference). So there is a decrease in the average wound healing process before and after using modern dressings.
5.	*Healing of Diabetic Foot Ulcers and Pressure Ulcers With Human Skin Equivalent* (Brem *et al.*, 2020)	**D : perspective nonrandomized case** **S : 23 patients** **V : treatment of diabetic foot ulcer patients** **I : HSE** **A : t-test**	Diabetic wound ulcers, like other chronic wounds, can be carried out in an accelerated wound healing phase without delay if the ulcer conditions are optimized. A multidisciplinary approach combining traditional and modern strategies is needed when managing Diabetes.
6.	*Modern wound care application in diabetic wound management* (Rohmayanti and Handayani, 2017)	**D :** *case report* **S :** *18 article* **V :** *modern wound care* **I :** - **A :** *Desciptive*	The results of this study have 4 topics, namely examination of wounds, types of modern dressings, how to care for wounds, and the effect on wounds. Bates-Jensen Wound is used for wound examination, the type of bandage used is hydrogel and wound ointment, the TIME management approach is used in wound care, and wound care has an effect on decreasing wound size, wound proliferation and granulation. The application of modern dressings on diabetic wounds has an effect on reducing wound size, wound proliferation and granulation. Paramedics are advised to use modern wound care methods in treating diabetic wounds.
7.	(Wintoko, Dwi and Yadika, 2020)	**S :** -	Optimal wound care has an important role in the wound healing process so that it can take place properly and in a short time so as not to reduce productivity and increase wound care costs. General wound management consists of wound bed preparation and wound closure. Wound bed preparation is done through debridement, bacterial control,

		V : wound care	and management of wound exudate. Wound closure is done when the wound has been well prepared and can be done per secundam, per primam, skin graft, flap, and using stem cells. Wound assessment, determination of action, and selection of dressings in the treatment of wounds with any diagnosis are carried out based on the condition and problem of the wound. The condition of the wound can be identified by the color and surface of the wound. The color of the wound can be adjusted according to the type of wound, namely acute wounds, necrotic wounds (black), slough wounds (yellow necrotic), granulation wounds, infectious wounds (green yellow), and epithelialized wounds. Wound surfaces can be wet wounds, dry wounds, and moist wounds. Wound problems can be bacterial infection, necrotic tissue, and exudate. Bacterial infections can be controlled by administering antibiotics, antibacterial materials and debridement. Necrotic tissue can be removed by debridement. Exudate can be treated by administering abortive products.
		I : journal articles	
		A : Descriptive	
8.	*Management of Adjunctive Therapy on Diabetic Foot Ulcers* (La *et al.*, 2018)	D : Case reports S : international and international articles V : management of diabetic foot ulcers I : A guide was developed for the theme interviews A : RCTs	The results of this study state that there are many articles that state that comprehensive management in the management of diabetic ulcers is very useful and can produce an appropriate treatment.
9.	*The Application of Telemedicine To Healing Grade Iv Diabetic Foot Wounds After Amputation* (Ii, 2021)	D : case reports S: patients with diabetic ulcers V: Telemedicine, healing diabetic ulcers I : Questionnaire A : Descriptive	Telemedicine contributes positively to efforts to cure DFS. This can be seen from the enthusiasm of nurses and patients who are satisfied with the significant wound healing success. The key factors from the nurse's perspective that contribute to the success of safe wound care are continuity of care, level of trust, competence among health professionals, therapeutic communication skills and critical thinking in deciding interventions. A number of limitations in monitoring wound healing through telemedicine depend on wound severity, level of independence, patient knowledge and family support in treating wounds.
10.	*Mechanistic insight into diabetic wounds: Pathogenesis, molecular targets and treatment strategies to pace wound healing* (Patel *et al.*, 2019)	D : Cross-sectional, longitudinal design S : 460 employees V : Wound healing strategy I: questionnaire A: ANOVA	Many factors contribute to impaired healing in diabetes as various studies suggest. Significant progress has been made in a variety of new therapeutic approaches. Approaches involving growth factors, multiple growth factors, various cytokine modulators, anti-inflammatory drugs, MMP inhibitors, angiogenesis stimulators, ECM stimulators, stem cells, and various natural-based products have been evaluated with limited success. . Recent studies based on the combinational approach have outperformed the conventional approach. This presents hope for researchers to go through new advances in the design of novel carriers along with understanding the basic approaches. This combination approach could be an important area for future research in the management of compromised wounds. Thus, contributing to the accelerated healing of diabetic wounds. Strong research is needed to recognize the various agents that may act at different phases of wound healing in diabetes. Improving clinical methodologies and systems can help in recognizing cure rates
11.	*Guidelines on use of interventions to enhance healing of chronic foot ulcers in diabetes (IWGDF 2019 update)* (Rayman *et al.*, 2020)	D : Quantitative. S : - V : Diabetic ulcer intervention I : Questionnaire	The results of this study are new recommendations including the consideration of the use of sucrose-octasulfate impregnated dressings in difficult to heal neuro-ischemic wounds and the consideration of the use of leukocytes combined with platelets and fibrin in wounds.

		A : (SEM) PLS	
12.	*Application of Modern Wound Care in the Treatment of Infectious Wounds in Padang City Government Hospital* (Rika and Elvi, 2016)	D : Quantitative S : 60 nurses V : Wound care I : SOP for modern wound care A : Descriptive	Wound healing requires approach : 1. Patient centered: always remember what causes a person to suffer chronic injuries and/or injuries. We can develop a good treatment plan but if the patient doesn't involve the patient it will work. 2. Holistic: good practice requires patient assessment "whole"/overall, not "hole in the patient"/"hole in the patient". All possible contributing factors should be explored. 3. Interdisciplinary: wound care is a complex business requiring skills from multiple disciplines, nursing skills, physiotherapists, occupational therapists, dietitians, and general practitioners and specialists (dermatologists, plastic surgeons, and vascular surgeons according to required). Sometimes requires/involve social worker. 4. Evidence based: at the moment handling environment must based on
13.	Development of a Modern Wound Care Management Protocol at the Cut Nyak Dhien Langsa Public House	D : quantitative and qualitative, S : 12 nurses V : Wound care protocol I : questionnaire, interview A : SEM-PLS	This research has produced MPLM POS which is a reference in carrying out wound care at RSUCND, and has a positive impact on increasing the knowledge, skills and attitudes of nurses in providing nursing care, especially in terms of wound care. The researcher hopes that the management of RSUCND will make a decision letter for establishing POS MPLM, and continue to supervise to evaluate the implementation of POS MPLM at RSUCND
14.	*Effect moist wound healing technique toward diabetes melittus patient with ulcus diabetikum in dhoho room RSUD Prof. Dr. Soekandar Mojosari* (Wahyuni, 2021)	D : Descriptive S: diabetic ulcer patients V : diabetic ulcer, Moist wound technique I : BWAT A: ANOVA	The results of this study regarding the effect of the moist wound healing technique on diabetic meatus patients with diabetic ulcers were that wounds could regenerate for 7 days
15	The process of wound healing and care (Purnama, Sriwidodo and Ratnawulan, 2017)	D : Cross-sectional S : - V: Treatment process, wound healing process I : Questionnaire A : Chi square and logistic regression	Development was also carried out on formulas to help the wound healing process, from base development to development of active substances from herbs. Therefore, through this review of the journal, it is possible to develop and trace the appropriate base formula for the active substance so as to increase the effectiveness of the wound healing process.

Based on table 1, 15 articles were found that match the literature search criteria based on PICOS (Population: patients with diabetic ulcers, Comparation: no comparison factors, Outcome: accelerate wound healing, Study design: Quantitative study, Time: article publication in the last 5 years) Some wound care methods that can speed up the wound healing process include: modern dressings, ozone therapy, negative pressure wound therapy.

IV. DISCUSSION

Diabetic ulcers have a negative impact on the Health-Related Quality of Life (HRQoL) felt by patients due to reduced

mobility and resulting in decreased ability to perform daily activities. This can increase dependence on others in meeting the needs of daily activities. Psychological comorbidities that can occur in patients with diabetic ulcers such as anxiety, feelings of fear, low self-esteem, shame, hopelessness, helplessness and depression. In addition, these psychological comorbidities can pose an additional risk to diabetic patients resulting in poorer self-care and outcomes, lower health-related quality of life, poorer psychosocial adjustment and have a high burden of health care interaction so that it can increase treatment costs. . Perceived stress related to wound healing or reulceration and fear of leg amputation increases negative mood and causes sleep disturbance in patients with diabetic ulcers. Diabetic ulcers can cause amputation of the lower extremities and often end in disability and death (Gardner and Quillen, 2018). So it is necessary to accelerate the wound healing process in diabetic ulcers.

The process of wound healing is a process of response to damaged tissue, the body has an extraordinary ability to replace lost tissue, improve structure, strength, and sometimes also function. Wound healing can also involve the integration of physiological processes. The healing properties of all wounds are the same, with variations depending on the location of the wound, the severity of the wound and the extent of the injury. In addition, wound healing is influenced by the ability of cells and tissues to regenerate (Yamamoto, 2017). The wound healing process can be done in several ways including modern dressings, ozone therapy, and negative pressure therapy. Previous research on modern wound care is a wound care method that uses the principle of moisture balance. This wound care is proven to be able to heal wounds faster because a balanced moisture environment will be able to facilitate cell growth and collagen proliferation. The principle of wound dressing wound care is to accelerate fibrinolysis, accelerate angiogenesis, reduce the risk of infection, accelerate the formation of growth factors. (Purnama, Sriwidodo and Ratnawulan, 2017).

Another procedure of choice in wound care is ozone therapy. Ozone therapy is a therapy that is claimed to have an essential role in the dermatological field in healing diabetic ulcers. Previous research stated that ozone can cause granulation to occur faster than without ozone because ozone has the ability to stimulate growth factor expression and the body's antioxidant response so that diabetic ulcers can recover quickly. Some articles have not shown the negative effects of ozone therapy, but sometimes ozone therapy is still carried out according to medical indications. (Hidayat, 2021)

Negative pressure procedures have also been shown to speed up the wound healing process. This is because negative pressure therapy can remove interstitial fluid which ultimately accelerates proliferation by reducing cytokines, improving capillary blood flow, then mechanical stress can form granulations, and giving negative pressure can also cause the environment to become moist so that it can stimulate angiogenesis, reduce colonies bacteria and repair wound tissue. Some of these things accelerate wound healing. (Kartika, 2021).

V. CONCLUSION

Wound care protocols such as modern dressings, ozone therapy, negative pressure wound therapy can be used as a method that accelerates wound healing compared to conventional methods so that choosing the right wound healing method can improve the quality of life of patients with diabetic foot ulcers and reduce complications that occur due to diabetes.

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