Politeknik Kesehatan Kemenkes Semarang

PROCEEDINGS

4th INTERNATIONAL CONFERENCE

ON HANDLING NON-COMMUNICABLE DISEASES (3ndICHNCDs)

"Education Transformation through Empowering Education and Health Professionals in Global Era"

Wednesday, June 14, 2022

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POLITEKNIK KESEHATAN KEMENKES SEMARANG

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Poltekkes Kemenkes Semarang

2022

Published by : Politeknik Kesehatan Kemenkes Semarang

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Edition I, First Printing 2022

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PREFACE

World Health Organization (WHO) officially declared the coronavirus (COVID-19) a pandemic in March 2020, significance that COVID-19 has spread widely in the world. Governments in many countries have issued many strategies and policies in dealing with COVID-19 cases. The Indonesian government has issued several policies, namely, releasing health protocols/guidelines, campaigning handwashing-using masks-keeping physical distance, establishing large-scale social restrictions, prohibiting Eid homecoming, preparing laboratories for COVID-19 tests, running COVID-19 tests in various places, establishing a new-normal order, and now implementing COVID-19 Vaccination Program.

However, amid the spike in COVID-19 cases even increasing in Indonesia, many people still ignore health protocols. Governments should engage through participatory efforts in a proactive, regular, transparent, and unambiguous manner with all affected and at-risk populations. Health Polytechnic of Semarang has capacity to build understanding knowledge, behaviors, perceptions, and identify the proper interventions, collaboration and community-based networks and influencers to empower the role of healthcare providers.

In a public health emergency such as the ongoing COVID-19 pandemic, one essential lifesaving action is Society Empowerment. Participatory society engagement interventions should include accurate information on risks, what is still unknown, what is having finished finding answers, what activities are being taken by health authorities, and what actions people can take to protect themselves. The participation of every member of at-risk and affected communities is needed to prevent infection and transmission especially when people have diseases.

Health care providers become the main pioneers in overcoming pandemic era. In this case, Semarang Health Polytechnic also contribute to provide the new generation of professional health care provider in the future. Health Polytechnic of Semarang will be a central determinant of the response effectiveness in managing society to prevent and promote for handling non communicable diseases. Building the capacity of national, regional, and local stakeholders is essential to empower the health providers to contribute well to achieve health status in the community.

Health Polytechnic of Semarang as one of healthcare provider always has a commitment to educate students with medical background. According to this point, Health Polytechnic of Semarang commit to create output of health care professional that will be able to compete to both globalization and digital era by conducting local wisdom of Indonesia.

Semarang,   June 14, 2022

Committee Chief,

Dr. Rr. Sri Endang Pujiastuti, SKM.,MNS

SPEAKERS

Keynote Speaker
Direktur Jenderal Tenaga Kesehatan
drg. Arianti Anaya, MKM
"Transformation Education Strengthen Health System in Indonesia"

Speaker 1
Dr. Suharsono, MN
"Empowering the Community to Participate for Improving Health Status"

Speaker 2
Dr. Jerico Pardosi
"The Role of Transformation and Digital Literation in Health Promotion"

Speaker 3
Dr. Bedjo Santoso, S.SiT, M.Kes
"Model and Media 222 Poster Pop up touch Button Audio as an Effort to Improve Dental Health Maintenance Behavior in the School"

Speaker 4
Madiha Mukhtar, M.SN
"Innovation Research in Education"

RUNDOWN
International Conference
"Education Transformation Through Empowering Education
And Health Professionals In Global Era"
Politeknik Kesehatan Kemenkes Semarang
Tahun 2022

		PIC
08.00 - 09.00 WIB	**Registration**	**IT**
09.00 -09.30 WIB	**Opening Ceremony**	**MC**
	1. Indonesian Raya 2. Mars of Poltekkes Kemenkes Semarang 3. Hymne of Poltekkes Kemenkes Semarang	**IT**
	Praying	Sudiarto, MN
	Committee Report from The Chief Committee (Dr. Rr. Sri Endang Pujiastuti, MNS.)	**MC**
	Welcome Speech from Director of Semarang Health Polytechnic	
	International Webinar	
09.30 - 10.00 WIB (change 11.00 WIB)	**Keynote Speaker** Direktur Jenderal Tenaga Kesehatan drg. Arianti Anaya, MKM "*Transformation Education Strengthen Health System in Indonesia*"	**Moderator:** **Wadir /Kapus** 30 minutes (20 m presentation and minutes discussio
09.30 – 10.00 WIB	**Speaker 1** Dr. Suharsono, MN "*Empowering the Community to Participate for Improving Health Status*"	**Moderator:** **Dr. Mardiyono** 30 minutes (20 m presentation and minutes discussio
10.00 – 10.30 WIB	**Speaker 2** Dr. Jerico Pardosi "*The Role of Transformation and Digital Literation in Health Promotion*"	**Moderator:** **Dr. Mardiyono** 30 minutes (20 m presentation and minutes discussio
10.30 - 11.00 WIB	**Speaker 3** Dr. Bedjo Santoso, S.SiT, M.Kes "*Model and Media 222 Poster Pop up touch Button Audio as an Effort to Improve Dental Health Maintenance Behavior in the School*"	**Moderator:** **Dina Luthfita P.** **S.Gz, M.Sc** 30 minutes (20 m presentation and minutes discussio
11.00 – 12.00 WIB	**Keynote Speaker** Direktur Jenderal Tenaga Kesehatan drg. Arianti Anaya, MKM "*Transformation Education Strengthen Health System in Indonesia*"	**IT**
	Certificate Appreciation	
12.00 – 13.00 WIB	**BREAK / ISHOMA**	
13.00 - 13.40 WIB	**Speaker 4** Madiha Mukhtar, M.SN "*Innovation Research in Education*"	**Moderator:** **Dina Luthfita P.** **S.Gz, M.Sc**

**SPEECH BY DIRECTOR OF POLITEKNIK KESEHATAN KEMENKES
SEMARANG in 4ᵗʰ INTERNATIONAL CONFERENCE
ON HANDLING NON-COMMUNICABLE DISEASES (3ndICHNCDs)
"Education Transformation through Empowering Education and Health
Professionals in Global Era"
Wednesday, June 14, 2022**

Assalamualaikum wr wb
Good Morning Ladies and Gentlement, Because of The God Allah SWT, We are staying togetherness to do the responsiblities in this scientific meeting Call for Paper the fourth International Conference 2022.

Excellencies, distinguished guests, ladies and gentlemen I would like to express all of the audiences who participate in this event, especially the dellegates that are as a CO-HOST from Poltekkes Kemenkes Jayapura, Poltekkes Tanjung Pinang, Stikes Bhakti Wiyata Kediri, Universitas Ngudi Waluyo, dan Poltekkes Kemenkes Makasar/ I had the honour of having all audiences with a good conditions and wellness It is a great pleasure for me to welcome you all to the event regarding CALL FOR PAPER today. This event provide the lecturers, students to present their paper that will share the knowledge, information and stimulate possible ideas for the future research. Together, we must learn from the researchs' result of the past, take the opportunities of the present to share and shape the future we all want to continue research. It can emphasise why this paper is important to the support the proposal research and why the researchers or the authors should present in the scientific event. It can show why the study is qualified to empower about the topic and share their insights. So, the presentation of the each paper is a proof effort of the authors to explore more the spesific competence to future research. Moreover, Poltekkes Kemenkes Semarang encourages our participants to stay happyly and maintain scientific situations when others have a oral presentation of which this international conference. It will be the interesting scientific meeting and foundations for the authors in the future studies including the researchs, the community services, and also the basic to implement integrating the results of the research in advances teaching learning. I would like to thank all the delegates, the study Program authorities around the Poltekkes Kemenkes Semarang, who have supported this event and also the Committee.
The wise words
We can not solve the our problem with Same thinking,
We used when We Created Them (Albert Eistein).

Experience is the Hardest Kind of Teacher,
 It Gives you test First, and Lesson Afterward (Oscar Wilde)

FINALLY, ENJOY FOR YOUR PRESENTATION
Waalaikumsalam Wr Wb.

SPEECH BY CHIEF ORGANIZING COMMITTEE OF 4ᵗʰ
INTERNATIONAL CONFERENCE
ON HANDLING NON-COMMUNICABLE DISEASES (3ndICHNCDs)
"Education Transformation through Empowering Education and Health
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Assalamu'alaikum wr wb
Good morning ladies and gentlement, Fisrtly, My Honourable People
Excellencies, distinguished guests, ladies and gentlemen
Health Polytechnic of Semarang have declared to do the vision " As the institution who be able to produce the professional graduation of students based on the vision local wisdom and recognized internationally. I do feel very humble this morning when I'm introducing on behalf of the committee International Conference May 27, 2022 and Call For Paper today. I would like to express all of the audiences who participate in this event, especially the dellegates that are as a CO-HOST from Poltekkes Kemenkes Jayaoura, Poltekkes Tanjung Pinang, Stikes Bhakti Wiyata Kediri, Universitas Ngudi Waluyo, dan Poltekkes Kemenkes Makasar/ The deepest respects for co host that the purpose of interissting collaboration to be a good reasons for avalaible in ths event. Oral Presentation is an important dissemination in one's result of the research. It is the key to success empowering in the future research and to have many opportunities in academic carrier as researcher or educator surounding scientific meeting. The sciencetific meeting has many advantages for authors, for instance, it illuminates a person's mind and thinking. It helps authors to plan for continuing research, socialize the results of the research, or it assesses other listenner to support a good opinion that making stronger innovation for developing ideas in research and develop the program of community services.. Having oral presentation through the seminar or conference build people think, feel, and behave in a way that contributes to their success, and improves not only their personal satisfaction but also create networking.Furthermore, on behalf of the committee, the respectful

the respectful regards for all participants

All in all

Semarang, June 14, 2022

Chief Commitee

Rr. Sri Endang Pujiastuti, SKM, MNS

TABEL OF CONTENTS

THE EFFECT OF GUIDED IMAGERY AND MUSIC (GIM) RELAXATION ON HIGH RISK PREGNANT ANXIETY LEVEL IN THE WORK AREA OF HEALTH CENTER KARANG PULE IN 2019

[1]**Baiq Desi Salma**, [1]**Linda Meliati**

*****Coressponding Author Email: desi.salma95@gmail.Com**

[1] *D-IV Midwifery Study Program at the Health Polytechnic of the Ministry of Health Mataram*

Abstract

Background:Fear and anxiety in pregnant women is actually a normal thing but if it can't be taken seriously, it will affect and have a great effect on the mother and fetus physically and psychologically. Research purposes :Knowing the Effect of Guided Imagery And Music (GIM) Relaxation on the anxiety level of high-risk pregnant women in the Karang Pule Health Center work area Research methods: This research is a quasi-experimental research usingone group pretest-posttest without control group.This research was conducted in May 2019. The population of this research study were high-risk pregnant women in the Karang Pule Health Center working area and a sample of 30 high-risk pregnant women. Data analysis using Wilcoxon Research result :The average score of the anxiety level of high-risk pregnant women before being given guided imagery and music (GIM) relaxation was 50.20, while the average score of the anxiety level of high-risk pregnant women after being given guided imagery and music (GIM) relaxation was 35.37. The results of the study showed the effect of guided imagery and music (GIM) relaxation on the anxiety level of high-risk pregnant women (p=0.000). Conclusion: There is an effect of guided imagery and music (GIM) relaxation on the anxiety level of high-risk pregnant women.

Keywords: *GIM relaxation, Anxiety, High risk pregnant women*

1. Introduction

Maternal death according to the World Health Organization (WHO) is death during pregnancy or within 42 days after delivery or termination of pregnancy, due to all causes related to or aggravated by pregnancy or its management, but not due to accident/injury.

Based on data from the World Health Organization (WHO) in 2015 said that the maternal mortality rate (MMR) in ASEAN countries was still quite high, namely Indonesia 98%, Vietnam 62%, Thailand 227%, Brunei 166% and Malaysia 256%. maternal mortality (MMR) in Indonesia is currently still high when compared to neighboring countries.('WHO', 2016)[12].

Many factors cause the high MMR, one of which is the mother's emotional condition during pregnancy until birth. Many studies have shown that the period of pregnancy, childbirth, and the postnatal period is a time of great stress, anxiety, emotional disturbance, and adjustment. Based on data from the Mataram City Health Office for the January-November 2018 period, from 11 health centers with the highest prevalence of high-risk pregnant women, Karang Pule Health Center was 202 pregnant women (77.93%), followed by Pagesangan Health Center 157 pregnant women (75.55%) and Karang

Taliwang Health Center 156 pregnant women (94.66%).

Based on monthly MCH data in the working area of the Karang Pule Health Center, there are still many pregnant women with high risk conditions, including pregnant women with SEZ, young pregnant women (less than 20 years), old pregnant women (more than 35 years) and pregnant women with comorbidities such as hypertension, diabetes mellitus, hyperthyroidism. According to preliminary data obtained from the Karang Pule Health Center, in 2018 the January-November period the number of pregnant women at risk was 202 out of 1,296 pregnant women, while in the January-February 2019 period there were 109 high-risk pregnant women.

Based on research conducted by(Ni Nengah Arini Murni, Suhartono and Abstract:, 2014)The results obtained from 37 samples divided into 17 respondents and 17 as controls showed that GIM relaxation exercises in the intervention group and pregnancy exercises in the control group proved to be more effective in reducing anxiety in mothers facing the first delivery.

A simple and effective way to manage symptoms of anxiety or stress is through relaxation techniques. Relaxation techniques are one of the non-pharmacological interventions

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that have been shown to be effective in reducing anxiety. Non-pharmacological interventions are often referred to as body and mind interventions such as meditation, yoga, prayer, hypnotherapy, imagery, auto-suggestion, autogenic exercises, tai-chi and biofeedback.

2. Method

The study used a Quasy Experiment with a one group pretest-posttest approach without a control group. The subjects in this study were high-risk pregnant women who were in the work area of the Karang Pule Health Center, Sekarbela District, West Lombok Regency, West Nusa Tenggara Province (NTB) in April 2019 which were determined based on the inclusion criteria, namely: high risk pregnant women living in the work area. Puskesmas Karang Pule, high risk pregnant women who are willing to be samples and are not illiterate.

The sample size of the study was 30 high-risk pregnant women, simple random sampling. The research variable consisted of the independent variable being Guided Imagery Music (GIM) relaxation, while the dependent variable was the level of anxiety in high-risk pregnant women.

The study was conducted in a class of high-risk pregnant women which was divided into 3 classes. Activities in this study involved village midwives and local cadres, especially for high-risk pregnant women class activities. Anxiety was measured using an anxiety questionnaire from the Hamilton Anxiety Rating Scale (HRSA). Measurement of anxiety variables was carried out before and after treatment. The analysis includes a comparative analysis of characteristics, age and the proportion of education level using the Independent Samples T-Test. Finally, the Wilcoxon test was carried out to see the effect before and after the relaxation of Guided Imagery And Music (GIM).

3. Result and Discussion

1. Characteristics of Respondents

Table 4.1 Distribution of Respondents Frequency of Pregnant Women Resti Based on Characteristics in the Work Area of Karang Pule Community Health Center

No	RESPONDENT CHARACTERISTICS	n	%
	Age		
1	<20 years	3	10
2	20-35 years old	23	76.7
3	>35 years old	4	13.3
Total		30	100
No	Education	n	%
1	Low	6	20
2	Intermediate	24	80
3	Tall	0	0
Total		30	100
No	Work	n	%
1	Housewife (IRT)	29	96.7
2	Laborer	0	0
3	Self-employed	1	3.3
4	Private	0	0
5	Civil Servants (PNS)	0	0
6	Other Jobs	0	0
Total		30	100
No	parity	n	%
1	Primigravida	9	30
2	multigravida	18	60
3	Grandemulti	3	10
Total		30	100

Based on Table 4.1, based on the characteristics of high-risk pregnant women, from 30 pregnant women mostly aged 20-35 years as many as 21 people (70%), education most of the mothers were secondary education as many as 24 people (80%). households (IRT) as many as 29 people (96.7%), while for parity with the most multigravida as many as 18 people (60%).

2. Distribution of Guided Imagery And Music (GIM) Relaxation on Anxiety Levels of High Risk Pregnant Women in the Work Area of Karang Pule Health Center

Table 4.2 Distribution of Respondents' Frequency of Anxiety Levels of Pregnant Women Before and after Guided Imagery And Music (GIM) Relaxation Exercises.

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Variable	Mean-Median	SD	Minimum-Maximum	95% CI
Pretest	50.20-49.50	7.034	35-68	47.57
Posttest	35.37-35.50	8.323	26-73	32.26

Based on Table 4.2 from the results of the analysis, it was found that the anxiety level of high-risk pregnant women before doing guided imagery music (GIM) was the mean value 50.20, standard deviation 7.034, 95% CI 47.57, while the anxiety level of high-risk pregnant women after doing guided imagery music (GIM) are the mean 35.37, standard deviation 8.323 and 95% CI 32.26.

3. The Effect of Guided Imagery And Music (Gim) Relaxation on Anxiety Levels of High Risk Pregnant Women in the Work Area of Karang Pule Health Center Table 4.3 Analysis of the influence

Table 4.3 Analysis of the influence of Guided Imagery And Music (Gim) Relaxation on Anxiety Levels for High Risk Pregnant Women in the Work Area of Karang Pule Health Center.

No	Variable	n	Mean Rank	p Value
1	Pretest	30	15.03	0.000
2	PostTest		29.00	

From Table 4.3 the results of calculations using the Wilcoxon test on the SPSS 20.0 computerized system. The mean rank before being given guided imagery and music (GIM) was 15.03, while after being given guided imagery and music (GIM) the mean rank was 29.00. The statistical test results obtained p value = 0.000, meaning that at 5% alpha there was a very significant effect on guided relaxation. imagery and music (GIM) on the anxiety level of high-risk pregnant women before and after being given guided imagery music (GIM) relaxation.

DISCUSSION

Based on the results of the research above, the researchers will discuss in accordance with the objectives of the researcher as follows:

Identifying the characteristics of pregnant women with high risk, including maternal age, education, occupation and maternal parity. a. Age Characteristics The age of pregnant women is divided into three, namely <20 years, 20-35 years and >35 years. ,7%) and age >35 years as many as 4 people (13.3%). Most of the age of high risk pregnant women, namely 20-35 years, 23 people (76.7%). According to Badudu (2012) women aged 20-35 years are physically ready to get pregnant because their reproductive organs are fully formed, compared to women who are <20 years old, their reproductive organs are still in the development stage, so the level of anxiety is more severe (panic), while women whose age is less than 20 years old. >35 partly classified in pregnancies at high risk of congenital abnormalities and complications in childbirth. The results of Cahyani Tri PS and Sulastri's research at RSUD Dr. Soediran, Surakarta, in 2009, the majority of mothers gave birth to LBW babies, namely those aged less than (<) 20 years and more than (>) 35 years. Meanwhile, the age range of mothers from 20-35 years did not give birth to too many LBW babies. The distribution of anxiety based on age shows the proportion of pregnant women who experience anxiety between mothers classified as high risk (56%) and mothers classified as low risk (51.9%) is balanced. The results of the Chi-Square test obtained p value = 0.873, where p value> 0.05 which means there is no significant relationship between maternal age and anxiety(Puspitasari, 2010). 9 b. Education The characteristics of pregnant women based on education are divided into 3, namely, low, medium, and high. The results of the research conducted for education were low as many as 6 people (20%), medium 24 people (80%) while for high education there were none. Most of the education of high-risk pregnant women, namely medium as many as 24 people (80%). The level of education is one of the social aspects that can affect human behavior. Education will affect a person in responding to something that comes from outside. People who have higher education will give a more rational response than those who are not educated and are not able to face a challenge rationally(Notoatmodjo, 2010).8

Conversely, low education will cause a person to experience stress, where stress and anxiety occur due to a lack of information that the person gets(Astria Y, 2009). Based on the results of research conducted by Astria Y, the distribution of anxiety based on education level shows that mothers with low and middle education have an increased risk of anxiety by 2,020 times compared to mothers with high education. Pregnant women who experience anxiety among mothers with secondary

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education (64.5%) are more than mothers with basic education (47.4%) and mothers with higher education (44.2%). The results of the Chi-Square test obtained a value of p = 0.05, where the value of p = 0.05 which means that there is a significant relationship between the level of education and anxiety in dealing with childbirth.(Astria Y, 2009)2 c. Work Job characteristics are divided into Housewives (IRT), Labor, Entrepreneur, Private, Civil Servant (PNS), and Others. Based on the results of the study, most of the Housewives (IRT) were 29 (97%) and 1 entrepreneur (3.3%).(Bobak, 2009)states that the mother's work is related to the activities carried out by pregnant women. Strenuous activity makes the risk of miscarriage and premature birth higher because of less oxygen supply to the placenta and premature contractions may occur. Activities or light exercise that pregnant women do will help maintain pregnancy. Pregnant women who do light activities have been shown to reduce the risk of premature babies being born Based on research results(K, Asri Wanda, 2014)The relationship between work and anxiety levels shows that most of the working mothers have low anxiety levels compared to non-working mothers with severe anxiety levels. pregnant women who do not work (IRT) as many as 58.9% and pregnant women who work as much as 41.1%. 6 d. parity Based on the results of the study for parity, the results obtained were the highest multigravida results were 18 people (60%). Gravidity is the frequency of pregnancy that the mother has experienced. During the pregnancy period, most pregnant women often experience anxiety, especially in primigravida mothers, the pregnancy they experience is the first time, so the third trimester is felt to be increasingly worrying because it is getting closer to the delivery process. In contrast to mothers who are pregnant or giving birth (multigravida) who are experienced in dealing with childbirth, they will understand more and will be calmer.(Bobak, 2009) Research result(K, Asri Wanda, 2014)shows that there is a significant relationship between gravidity and anxiety of pregnant women. 6 The results of Colti S.'s research at Semarang Hospital, 2008, it was found that mothers who had a previous birth spacing of < 2 years, as many as 18 respondents (78.2%) experienced anxiety and gave birth to low birth weight babies.(Sistiarani Colti., 2008).11 2 Identifying Anxiety Levels of High-Risk Pregnant Women Before and After Performing Guided Imagery And Music (GIM) Relaxation Exercises on Anxiety Levels of High-Risk Pregnant Women. From the results of the analysis, the average pretest and posttest for high-risk pregnant women anxiety levels are 50.20-35.37, median 49.50-35.50 (95% CI: 47.57-32.26) with a standard deviation of 7.034-8.323, the lowest anxiety level is 35-26 and the highest is 68. -73. From the estimated interval, it is concluded that it is 95% believed that the average anxiety level of high-risk pregnant women in the Karang Pule Health Center work area in 2019 is between 47.57 to 32.26. That the management of stress, anxiety and depression at the stage of prevention of therapy requires a holistic approach method, which includes physical, psychological, psychosocial and psychoreligious(Hawari, 2006). Several studies have shown that pregnant women experience anxiety or depression, such as the results of research conducted by Adewuya et al. (2006) in a population which showed that 39% (172 pregnant women) experienced anxiety compared to women in the control group who were not pregnant, only 16.3%. who have anxiety(Adewuya et al., 2006).1 While the research results(Cury, AF & Menezes, 2007)of 432 normal pregnant women showed that the incidence of anxiety and depression was quite high.4 On research(Setyaningsih, Setyowati and Kuntarti, 2013), showed that there was a difference in the incidence of anxiety before and after being given the "Harmony" package in the intervention group. From the data processing obtained before treatment (pre test) there were 75% of respondents who did not experience anxiety and after treatment (post test) it was found that 100% of respondents did not experience anxiety.10 3 Analyzing the Effect of Guided Imagery And Music (GIM) Relaxation on Anxiety Levels for High-Risk Pregnant Women. Before the bivariate analysis was carried out, normality test was carried out using Shapiro-Wilk. To find out whether the data was normally distributed or not, after processing the data, the results were 0.871 and 0.000, it was known that the p-value <0.05 so that the data was not normally distributed.

After the results of the normality test were known, non-parametric statistical methods were then carried out using the Wilcoxon test, obtained a significance value of 0.000 (p value <0.005) meaning that at 5% alpha there was a very significant effect on guided imagery and music (GIM) relaxation on maternal anxiety levels. high risk pregnancy before and after being given guided imagery music (GIM) relaxation.

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4. Conclusion and Sugestion

Based on the results of research on the effect of guided imagery and music (GIM) relaxation on the anxiety level of high-risk pregnant women in the Karang Pule Health Center work area in 2019 there is a very significant effect of guided imagery and music (GIM) relaxation on the anxiety level of high-risk pregnant women (p = 0.000 < 0.05) in the work area of the Karang Pule Health Center in 2019.

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LITERATURE STUDY OF THE INFLUENCE OF SENORITA GENERAL (LOW IMPACT AEROBIC EXERCISE AND TERA EXERCISE) ON THE QUALITY OF LIFE OF MENOPAUSEE WOMEN

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ABSTRACT

Background: The end of menstrual periods (menopause) is often accompanied by a number of symptoms, such as hot flashes, night sweats, insomnia, depression, memory problems and impaired quality of life. Physical exercise with aerobic exercise duration of 30 minutes for 3 or 4 times will have a positive effect on quality of life. All movements in tera gymnastics have the advantage of reducing anxiety, reducing depression and improving sleep quality. **Objective:** The purpose of this literature review study is to find out specifically the effect of Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) on the quality of life of menopausal women. **Method:** This type of research is the study of literature. Researchers conducted a journal search through the National Library of the Republic of Indonesia, Ebsco and Google Scholar using keywords the effect of low impact aerobics and tera exercises on quality of life. The literature used is published literature from 2010 to 2019. **Results:** The results of the analysis of this literature study show that the Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) the highest respondent characteristics in this study were the number of children <4 as much as 82.1%. Married majority of married status is 78.6%. The level of education in both groups was more low-educated at 57.1%. For employment status, more did not work at 62.5%. Quality of life has changed the most from the physical domain followed by the psychological domain to the social and environmental domain. **Conclusion:** There are Effects of Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics on the Quality of Life of Menopausal Women.

Keywords: quality of life, menopause, low impact aerobics and tera gymnastics.

Background : The end of the menstrual period (menopause) is often accompanied by a number of symptoms, such as *hot flashes* , night sweats, *insomnia* , depression, memory problems and impaired quality of life. Physical exercise with 30 minutes of aerobic exercise for 3 or 4 times will have a positive effect on the quality of life. All movements in tera exercise have the advantage of being able to reduce anxiety, reduce depression levels and can improve sleep quality. **Destination :** The purpose of this literature study is to find out specifically the effect of Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) on the quality of life of postmenopausal women. **Methods: This** type of research is a literature study. Researchers conducted a search for journals through the National Library of Indonesia, Ebsco and Google Scholar using the keywords the effect of low impact aerobic exercise and tera exercise on quality of life. The literature used is literature published from 2010 to 2019. **Results:** The results of the analysis of the literature study This shows that Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) are characteristic the highest respondents in this study were the number of children <4 as many as 82.1%. The majority marital status married that is 78.6 % . Level of education both groups have more low education as much as 57.1 % . For employment status, more are does not work that is 62.5 % . The quality of life that has changed the most is from the physical domain followed by the psychological domain then the social and environmental domains. **Conclusion :** There is an Influence of Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics on the Quality of Life of Menopausal Women.

Keywords : quality of life, menopause, *low impact aerobic* exercise, tera exercise.

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PRELIMINARY

According to *the World Health Organization ,* the elderly (elderly) are a population group aged 60 years or more. Globally in 2013 the proportion of the population aged over 60 years was 11.7% of the total world population and it is estimated that this number will continue to increase along with the increase in life expectancy. The proportion of elderly people in Indonesia also increases every year. WHO data in 2009 showed the elderly amounted to 7.49% of the total population, in 2011 it became 7.69% and in 2013 the proportion of the elderly was 8.1% of the total population (WHO, 2015) .

The results of research conducted by Nurlina (2018) on the Effect of Low Impact Aerobic Gymnastics on Improving the Quality of Life of Menopausal Women found that the quality of life of the group of menopausal women who routinely did low impact aerobic exercise was better than the group of menopausal women who did not do exercise. One of the physical activities that can be done is aerobic exercise. Physical exercise with 30 minutes of aerobic exercise for 3 or 4 times will have a positive effect on quality of life (Martin, et al., 2009) . The movements carried out in aerobic exercise can be in the form of movements of light intensity (low impact). According to Leuto et al. (2012) aerobic exercise can increase the production of hypothalamic -endorphins which can stabilize temperature so that it can reduce the frequency of hot flushes and can improve quality of life.

Another study conducted by Fridayanti (2018) , Regarding the Effect of Tera Gymnastics on Sleep Quality in the Elderly . It was found that the sleep quality of the elderly group who routinely did elderly exercise had better sleep quality than the elderly group who did not routinely do exercise. The advantages of tera exercise are that all movements in Tera exercise can reduce anxiety (anxiety), stress and reduce levels of depression (Sukartini & Nursalam, 2009) . When doing Tera exercise, a process will occur where the *HPA axis* stimulates the pineal gland to secrete *serotonin and melatonin ,* after that stimulation from the *hypothalamus* will be transmitted to *the anterior pituitary* to form -endorphins and *enkephalins* (Triyanto, 2014) . Due to the emergence of *endorphins* during exercise, there will be an effect of feeling happy, happy, able to sleep better, and the mind remains fresh (Widiani & Proverawati, 2010; Aisyah, 2017) .

Measuring the quality of life is important for women who have entered menopause, so that measures can be taken to improve the quality of life. This is because the quality of life will affect the survival of the woman herself related to her life expectancy. If you have a good quality of life, you will have a good life expectancy as well (Glasier & Gebbie, 2006) .

With the support of theory, observations and literature studies conducted on postmenopausal women through Senorita Gymnastics as a tool to improve the quality of life of postmenopausal women, the authors dig deeper into the effect of Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) on the quality of life of postmenopausal women.

METHOD

The research design included in this literature study used a quasi-experimental design and a random control trial. This type of research method is the best method in answering clinical

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questions in the field. The types of studies reviewed were all types of research that used Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) on the quality of life of postmenopausal women. Participants who are determined to be reviewed are limited. Only the elderly were included as the sample observed in the literature study. The intervention included in the inclusion criteria was the Senorita Gymnastics intervention with the outcome type limited to the effect of Senorita Gymnastics on the quality of life of postmenopausal women. This literature study was compiled through a search for published research articles. The sample population is all samples of the elderly who receive treatment for elderly exercise, low impact aerobic exercise and tera exercise to improve the quality of life of postmenopausal women. The search was carried out using the National Library of the Republic of Indonesia, Ebsco and Google Scholar with keywords for each selected variable. The articles found were read carefully to see whether the articles met the authors' inclusion criteria to be used as literature in writing *a literature review* . Livelihood is limited from 2000 to 2020 which is accessed in full text in pdf format and has analytical research methods. Published research articles with keywords the effect of low impact aerobic exercise and tera exercise on quality of life will be included in *the literature review* .

RESEARCH TIME

The preparation of the literature study research was carried out from April 2020 to May 2020.

SEARCH METHOD

Literature Review uses 3 (three) media or journal search methods, which are as follows:

1. National Library of the Republic of Indonesia with the website address : www.pnri.go.id the total journals obtained are 5 journals.
2. Ebsco with site address: http://search.ebscohost.com the total journals obtained are 2 journals.
3. Google Scholar site address https://scholar.google.co.id the total journals obtained are 13 journals.

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RESULTS

No.	Writer (year)	Title	Destination	The place Study	Amount Sample	Age	Method Study	Results
1	Obedient Sumedi (2010)	The Effect of Elderly Gymnastics on Reducing Insomnia Scale in the Elderly	Knowing the effect of Elderly Gymnastics on decreasing the insomnia scale in the elderly	At the Nursing Home, Dewanata Cilacap	16 samples	60-74 years old	*Quasi Experimental* With Pretest - *Posttest Without Control Group*	The elderly who experience insomnia are mostly in the age group of 60-74 years *(elderly)* as many as 13 respondents (81.25 %). The most gender, namely male as many as 9 respondents (56.25 %). The degree of insomnia of respondents before being given exercise treatment was 9 respondents (56.25%) with mild insomnia, 5 respondents (31.25%) with moderate insomnia, while 2 respondents (12.5%) had severe insomnia. The degree of insomnia of the respondents after being given exercise treatment was 11 respondents (68.75%) did not experience insomnia, 3 respondents (18.75%) had mild insomnia, while 2 (12.5%) had moderate insomnia. There was a decrease in the degree of insomnia after being given exercise treatment in 5 respondents with moderate insomnia degrees decreased to 3 respondents, 2 respondents who experienced severe insomnia degrees decreased to moderate insomnia degrees. While the other 9 respondents who experienced mild insomnia had no longer experienced insomnia. Three respondents experienced a good decrease in the degree of insomnia from moderate insomnia to respondents who did not experience insomnia , this was because respondents were more routinely exercising every day than scheduled, namely walking around the orphanage. There is a significant effect of elderly fitness exercise on decreasing insomnia scale at Panti Wredha Dewanata Cilacap with *p value* : 0.0001.
2	Ita Eko Suparni (2014)	The Relationship between Menopause Disorders and Anxiety Levels in	Knowing the relationship between menopausal disorders and anxiety levels in menopausal women	In Dawuhan Village, Purwoasri District, Kediri Regency	84 samples	45-55 years old	Correlational Study Analytical Research Design	The results of the analysis with Chi Square manual calculation method X2 count > X2 table that is 13.75 > 7.815 so H1 is proven, which means the relationship between menopause disorders and anxiety levels in menopausal women in Dawuhan Village, Purwoasri District, Kediri Regency. In the manual calculation of the contingency coefficient, the value of 0.375 is obtained, then the relationship between the two variables is low. The physical changes of menopausal women cause anxiety in menopausal women, but there are other factors such as attitudes, lifestyle,

		Menopaus al Mothers						cultural and psychological factors and socioeconomic status, which affect menopausal women's anxiety.
								Factors that significantly influence the level of anxiety in menopausal women are knowledge, attitudes, family support, economic conditions and lifestyle. However, socio-cultural characteristics including age, education level and occupation did not show a significant effect.
								The conclusion of this study is that the better the factors that have a significant effect, the lower the level of anxiety experienced. Menopausal women should be encouraged to fill their spare time by being actively involved in activities such as posyandu for the elderly so that they can exchange information with fellow women and seek extensive information about the things they are facing through various counseling conducted by health workers. Meanwhile, families are advised to pay attention to menopausal women, equip themselves with sufficient information about menopause, consult with closest family members, friends and even doctors to get the right information and go through menopause with a healthy lifestyle and positive thinking in order to avoid menopause. anxiety itself.
3	Ruri Yuni Astari (2014)	The Relationsh ip Between Menopaus e Syndrome and Quality of Life for Menopaus al Women	Knowing the relationship between menopausal syndrome with menopausal women's quality of life	At Sukahaji Health Center , Majalengk a Regency	65 samples	45-65 years old	The research method was carried out by analytical observation with a cross-sectional design for 1-2 years	The results showed that there was a strong negative relationship between physiological and psychological aspects of menopause syndrome with quality of life (r= -0.786 p=0.000 and r= -0.706 p=0.000), a strong negative relationship simultaneously physiological and psychological aspects of menopause syndrome with women's quality of life. (r= -0.772, p = 0.000), there was a significant relationship between income and education with quality of life (r=-0.313 p=0.011 and r= -0.359 p=0.003). Parity was not significantly related to the quality of life of postmenopausal women.
								There is a relationship between menopausal syndrome from physiological and psychological aspects with quality of life. The most common physiological complaints were inability to concentrate, forgetfulness and confusion, indigestion, flatulence, nausea and frequent urination, decreased physical and mental energy, profuse sweating and fatigue. The psychological complaints that were felt the most were irritability, restlessness and impatience, increased allergies and changes

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#	Author	Title	Aim	Place	Sample	Age	Method	Result
								in body odor, feeling tired, lethargic or tired and experiencing dizziness, heavy head and loss of balance.

Overall, the quality of life of postmenopausal women in the Sukahaji Health Center area on average stated that they were normal in carrying out their lives, especially health and were satisfied with their environment and social relationships. For menopausal women in the Sukahaji Public Health Center, Majalengka Regency, less income and a low level of education are associated with a decrease in the quality of life so that it will affect physical, psychological and social factors. |
| 4 | Yulia Handayani (2014) | The Relationship Between Physical Activity With The Level Of Climacteric Complaints In Women Aged 45-65 Years | Knowing the relationship between physical activity and the level of climacteric complaints in women aged 45-65 years | In Tilingsing Village | 37 samples (purposive sampling) | 45-65 years old | Correlation Descriptive | Based on the *Pearson Correlative test, it was concluded that* the correlation coefficient was -0.67 (p value = 0.810) This figure shows that the two variables have a very weak correlation because they are below 0.5. The negative sign (-) indicates the opposite relationship, in other words the increase in physical activity is not followed by the level of climacteric complaints. The coefficient of determination (r²) is 0.004. This shows that physical activity affects the level of climacteric complaints by 0.4 % and the rest is influenced by other factors. The relationship between physical activity and the level of climacteric complaints was analyzed by means of the *biserial correlation point statistic* , where the score of physical activity as the X axis and the level of climacteric complaints as the Y axis. From the results of data processing, the correlation coefficient (r) was -0.67 and p value = 0.810. . This figure shows that the two variables have sufficient correlation because they are below 0.5 . The negative sign (-) indicates the opposite relationship, in other words, increased physical activity is not followed by climacteric complaints. The coefficient of determination (r²) is 0.004. This shows that physical activity affects the level of climacteric complaints by 0.4 % and the rest is influenced by other factors. This shows that the level of climacteric complaints is not influenced by physical activity.

Another factor that influences a person's readiness to face menopause is socioeconomic conditions. A person's socioeconomic conditions will indirectly affect his readiness to face menopause. Good economic conditions allow women to more easily get supporting facilities and |

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								facilities, such as magazines, newspapers, health books, and so on to obtain information and knowledge about menopause. In addition, a person's health condition can also affect psychological conditions, for example in people with chronic diseases These conditions can affect a woman's readiness before menopause, because there is a period of transition or changes. The results of the study Correlation of physical activity with the level of climacteric complaints was sufficient, where physical activity had a relationship with the level of climacteric complaints of 0.4 % .
5	Oktevana Tulung (2014)	The Relationship between Premenopausal Mothers' Attitudes With Changes That Occur Before Menopause	Knowing the relationship between the attitudes of premenopausal mothers with the changes that occur before menopause	In Woloan 1 Village, West Tomohon District, Tomohon City	43 samples	41-48 years old	Using the *Cross Sectional Method*	Research result using Chi-Square statistical test analysis with a significance level of = 0.05 or 95%. The results of statistical tests obtained the value of = 0.049 < = 0.05 . Conclusion is that there is a relationship between the attitudes of premenopausal mothers with changes before menopause in the Woloan 1 village, West Tomohon District, Tomohon City. It is hoped that the Woloan 1 sub-district government can increase cooperation with health workers to provide counseling and counseling to premenopausal women regarding the importance of changes that will occur before menopause. Conclusion: the general attitude of premenopausal women in Woloan 1 Village, West Tomohon District, Tomohon City is to be positive, the changes that occur before menopause in Woloan 1 Village, West Tomohon District, Tomohon City are premenopausal women who know the changes that will occur before menopause, there is a relationship between the attitudes of premenopausal mothers with changes that occur before menopause in Woloan 1 Village, West Tomohon District, Tomohon City.
6	Ida Sriwaty (2015)	The Effect of Menopause Psychoeducation and Relaxation to Reduce	Knowing the effect of menopause psychoeducation and relaxation to reduce anxiety in	In the Village in the Yogyakarta Region	33 samples	>40 years	*Randomized Control Group Pre-Test Post-Test Design*	Based on the results of the analysis using the *Wilcoxon test* , the experimental group showed a value of Z = -2.207 with a value of p = 0.027 (p < 0.05), meaning that it can be concluded that the *menopause psychoeducation intervention* and relaxation had a significant effect on reducing anxiety in *premenopausal women,* while in the group control shows the value of Z = 1.633 with a value of p = 0.102 (p> 0.05). This shows that the subjects in the control group did not experience a decrease in anxiety scale scores.

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		Anxiety in Pre Menopausal Women	pre-menopausal women					Based on the results of the *Mann Whitney test* the experimental group and the control group obtained the results of the value of Z = -2.303 and p = 0.021 (p < 0.05), this indicates that there are differences in anxiety scale scores in the experimental group and the control group. The provision of psychoeducation and relaxation has an effect on decreasing the anxiety level of *premenopausal women* in the experimental group The results showed that the experimental group obtained significant results with a value of p=0.027 (p< 0.05) and a Z-value of -2.207 while the control group showed insignificant results with a value of p=0.102 (p>0.05) and a value of Z is -1.633. *The Mann Whitney* test shows a significant value of 0.021 and a Z value of -2.303. In conclusion, giving menopausal psychoeducation and relaxation can reduce anxiety in pre-menopausal women. Based on the results of the research and discussion above, it can be concluded that that *menopause* psychoeducation and relaxation have an effective effect on reducing anxiety in *perimenopausal women.* The factors that influence the decrease in anxiety are activeness during the therapy process such as being active in relaxation exercises, being enthusiastic in following the material given. During therapy, participants also experience changes that occur in themselves when facing perimenopause so that they can take preventive measures to reduce the anxiety experienced by the subject, so it is better for trainees to be able to continue to practice relaxation which can be done independently, and read psychoeducational books that have been given so that information regarding menopause is not forgotten.
7	Puguh Armansy ah Prihadi (2015)	The Effect of Tera Gymnastics on Changes in Pain Scale in the Elderly	Knowing the effect of tera exercise on changes in the pain scale in the elderly with osteoarthriti s	At the Tresna Wredha Hargoded Ali orphanage in Surabaya	24 samples (simple random samplin g)	45-65 years old	Pre-Experiment al Design With Pretest And Post-Test Only Design	The results of the study showed that the pain scale before the Tera Gymnastics was mostly moderate pain levels in 15 elderly people (56%). While the level of pain after doing Tera Gymnastics mostly experienced mild pain as many as 16 elderly (64%) and based on the Wilcoxon sign rank test statistical test P: 0.000 <0.05 in the elderly with this osteoarthritis pain scale, which means there is an effect of Tera Gymnastics on the pain scale. osteoarthritis.

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		Osteoarthritis					The conclusion in this study is that there is an effect of Tera Gymnastics on changes in the pain scale, so it is hoped that Tera Gymnastics can be an alternative therapy to treat pain in the elderly with osteoarthritis.
8	Ahmad Dzikri Anshori (2016)	The Effect of Tera Gymnastics on Stress Levels in the Elderly	Knowing the effect of tera exercise on stress levels in the elderly	At the Posyandu for the Elderly Sawunggaling Lidah Wetan, Lakarsantri, Surabaya	30 samples (random sampling)	>60 years old	One Group Pretest-Posttest Design	The research data can be seen that: 1) *Pre-test* results before being given training (*treatment*) is an average of 64.13 2) *Post-test results* after given training (*treatment*) is equal to 54.63 3) The value of the difference in test results between *pretest* and *posttest* is an average of -9.5 . It is said that the Tera exercise training (*treatment*) can reduce stress levels in the elderly according to the percentage of -15. Based on the results of research conducted by the author in the group of the Elderly Tongue Wetan Surabaya, it can be concluded that the level of stress experienced by the elderly before and after doing Tera exercise. It is shown in the results of the calculation of the mean pretest of 64.13 and post-test of 54.63 so that the difference/influence is -9.5. Giving Tera exercise turned out to have a positive and significant effect on reducing stress in the elderly at the Sawunggaing Posyandu, as shown in the calculation results of the *Paired Sample* T-Test which obtained t count of 18.43 which is greater than t table of 2.045 so that Tera exercise has an effect on decreasing stress in the elderly. The results showed that to see a statistically significant difference, it can be seen in the t-count with a probability of 0.05 t-count is greater than the t-table, namely 18.34> 2.045 for the minus value is ignored because the results of the study are not in favor of one possibility of the null hypothesis being rejected. This means that there is an effect of Tera Gymnastics on reducing stress in the elderly
9	Erna Silvia Budi Anggarwati (2016)	Improving the Quality of Sleep for Elderly Women	Knowing the improvement of the sleep quality of elderly women	In Depok Jaya Village Area	98 samples	60-79 years old	Comparative Analytics With *Cross Sectional Approach*	The results showed that there was a difference in the PSQI scores of elderly women who regularly participated in gymnastics and those who did not by 2.11 (p <0.001). This study recommends health practitioners to advocate for posbindu that have not implemented elderly gymnastics activities in their area and encourage the elderly to follow elderly gymnastics regularly.

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		Through Routinely Performing Elderly Gymnastics	through routinely doing elderly gymnastics					This study examines the relationship between the routine of following elderly exercise and the sleep quality of elderly women. Based on the results of the study, it was found that there was a relationship between the routine of participating in elderly gymnastics and the sleep quality of elderly women. Elderly exercise that is done regularly can improve the quality of sleep in the elderly. So, routinely following gymnastics is an important factor that must be considered in order to get optimal benefits in improving the quality of sleep for the elderly. Therefore, the researcher recommends health practitioners to advocate for posbindu-posbindu that have not implemented elderly gymnastics activities in their area and encourage the elderly to take part in elderly gymnastics regularly (ER, TN, PN).
10	Ni Nyoman Sasnitiari (2016)	*Low Impact* Aerobics on Reducing Complaints of Premenopausal Mothers	*low* impact aerobic exercise on reducing complaints of premenopausal women	In the area of the Merdeka Health Center, Bogor	23 samples (*systematic random sampling)*	41-48 years old	Pre-Experimental Design , Namely One Group Pretest Post-Test	*Low impact* aerobic exercise has an effect on reducing vasomotor complaints, psychological complaints and somatic complaints in premenopause 2. Prior to aerobic exercise, respondents experienced the most vasomotor complaints, 4 complaints, after participating in aerobic exercise, the most complaints were experienced by respondents with 2 complaints. 3. Most psychological complaints experienced by a respondent before exercise 3 complaints after participating in aerobic exercise the most complaints experienced by respondents became 1 complaint. 4. The most vasomotor complaints experienced by a respondent, after participating in aerobic exercise, the complaint experienced by the respondent remained 1 complaint. The results of the analysis had a significance value of 0.00 ($p < 0.05$) for vasomotor and psychological complaints and 0.03 ($p < 0.05$) for somatic complaints. It was concluded that there was a significant effect before and after participating in aerobic exercise. It is necessary that a *low impact* aerobic exercise program be carried out routinely for pre-menopausal mothers in an effort to prevent and reduce premenopausal complaints.

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| 11 | Nurlina (2017) | The Effect of Low Impact Aerobic Gymnastics on the Quality of Life of Menopausal Women | Knowing the effect of low impact aerobic exercise on the quality of life of menopausal women | In Cambahan Hamlet, Gamping II Health Center Working Area | 56 samples (purposive sampling) | 45-55 years old | Quasy Experiment With Pretest And Posttest Non Equivalent Control Group Design | In group intervention mean quality of life before do aerobics *low impact* is 60.99 and after doing gymnastics Average *low impact* aerobics increases to 71.72. Visible difference in value **the** *mean* between before and after exercise was 10.72 with a standard deviation of 9.42. The results of statistical tests obtained *p value* < 0.05 , it can be concluded that there is a significant difference between the quality of life before and after doing low impact aerobic *exercise* .

In the control group the average quality of life before doing *low impact aerobic exercise* is 70 ,36 and after **do** *low impact* aerobics the average increased to 72.42. Seen difference in *mean* between before and after exercise is 2.06 with standard deviation 11.26. Statistical test results obtained *p value* 0.341 which means that no there is a significant difference between the quality live before and after doing *low impact* aerobic exercise **.**

Statistic test results *pvalue* _ < 0.05, which is equal to 0.003. These results explain that there are significant differences in the two research groups. Average value *mean* on group doing aerobics *low impact* of 10.72 and in the group that did not do aerobic exercise *low impact* of 2.06. So it can be concluded that the average difference in *mean* between the two groups is 8,66 . _

The results showed that there was an increase in the quality of life in postmenopausal women before and after doing low impact aerobic exercise in the intervention group by 10.72 (p value = 0.000) and in the control group by 10.72 (p value = 0.341). |
| 12 | Lina Siti Nuryawati (2017) | Determinants of Quality of Life in Women Who Have Entered Menopause | Knowing the determinants of quality of life in women who have entered menopause | At the UPTD, Argapura Health Center, Majalengka Regency | 80 samples | 45-65 years old | Using the *Cross Sectional Method* | The results showed that the determinants of the quality of life in women who had entered menopause with an average total quality of life (70.6), less than half of the physical symptoms were in the severe category (46.3%), half of which were psychological disorders in the rice category (50.0). %), less than half have low education level (48.8 %), less than half have low income (46.3%). there is a relationship between physical symptoms (p 0.000), psychological disorders (p 0.000), and education level (p 0.001), income (p 0.003) weak soup during menopause at the UPTD Argapura Public Health Center Majalengka Regency in 2017. Conclusion from the research |

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| | | | | | | | | 1. Determinants of quality of life in women who have entered menopause at the UPTD Argapura Majalengka district in 2017 with an average total quality of life of 70.6 including the moderate category.
2. Less than half of the physical symptoms of women who have entered menopause at the UPTD Argapura Health Center Majalengka Regency in 2017 are in the severe category
3. Half of the psychological disorders in women who have entered menopause at the UPTD Argapura Majalengka Regency in 2017 are in the severe category.
4. Less than half the education level of women who have entered menopause at the UPTD Argapura Health Center Majalengka Regency in 2017 at a low level of education
5. Less than half of the income for women who have entered menopause at the UPTD Argapura Health Center Majalengka Regency in 2017 is classified as low income
6. The relationship between physical symptoms and quality of life in women who have entered menopause at the UPTD Argapura Regency in 2017
7. The relationship between psychological disorders and quality of life in women who have entered menopause at the UPTD Argapura Health Center Majalengka Regency in 2017
8. There is a relationship between the level of education and the quality of life for women who have entered menopause at the UPTD Puskesmas Argapura, Majalengka district in 2017.

9. There is a relationship between income and quality of life for women who have entered menopause at the UPTD Argapura Health Center, Majalengka Regency in 2017. |
| 13 | Siti Aisyah Zanta Pradan (2017) | The Effect of Tera Gymnastics on Reducing Anxiety Levels (Anxiety) | Knowing the effect of tera exercise on reducing anxiety levels in the elderly | At Tresna Werdha Hargo Dedali Orphanage, Surabaya | 51 seniors (purposive sampling) | 60-90 years old | Pre-Experimental Design With Pre-Post Test Design Bentuk | The results showed that the tera exercise had an effect on the respondent's anxiety level with p value = 0.001

Conclusions from the study:

15 elderly at the Tresna werdha hargo dedali Panti Surabaya experienced anxiety ranging from severe, moderate and mild levels. the cause of anxiety for the elderly at the Tresna werdha hargo dedali Panti Surabaya is caused by several factors such as worrying about family, lack of family |

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								support, education level, age, physical illness, fear of death and not being able to adapt to new friends
	in the Elderly							Tera gymnastics can reduce anxiety levels in the elderly at the Tresna werdha hargo dedali Panti Surabaya because it can make the elderly relax, comfortable, happy and able to interact with other humans
14	Luh Ari Arini (2018)	Quality of Life Menopause Who Regularly Perform Physical Exercise Orhiba: Measurement Study Using the WHOQOL-BREF Questionnaire	Knowing Quality of Life Menopause Who Regularly Perform Physical Exercise Orhiba: Measurement Study Using the WHOQOL-BREF Questionnaire	At Singaraja Bali City Park	100 samples (*purposive sample*	45-59 years old	Observational Analytics With Cross-Sectional Design	From the results of data analysis using the *sample t test* ($\alpha = 0.05\%$) there were significant results ($p = 0.000$) between the group who did physical exercise orhiba and those who did not, and between those who routinely did physical exercise orhiba with a frequency of 5 times / week have better results when compared with the frequency of 2-3 times / week and 1-2 times / week. Based on this, it is necessary to exercise (orhiba) on a regular basis, especially in menopausal women, because the more often and regularly it is done, the results obtained will also be better related to the quality of life of menopausal women. In respondents who have never done physical exercise with those who routinely do physical exercise the results are also different, which is found in the quality of life domains such as physical, psychological , social and environmental domains as well as general health. The control group said that the physical pain they experienced often prevented them from doing their activities, often needed medical therapy related to their physical condition and were less satisfied with their ability to work compared to respondents who did regular physical exercise, the control group also said that their night sleep was often disturbed and sometimes could not sleep. . This situation will definitely affect the health of the body as a whole and ultimately have an impact on decreasing the quality of life when entering old age, moreover postmenopausal women have to face the effects of decreasing hormones that occur in their bodies or experience menopausal syndrome. Respondents who routinely do physical exercise with a frequency of 5 times a week have better results than the control group, indicating that the more often they do orhiba, the quality of life of postmenopausal women will be better as well as psychological and social conditions. In the psychological domain, menopausal women who routinely do physical exercise orhiba say they are more able to concentrate and accept

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| | | | | | | | | changes in their body appearance and rarely have negative feelings when compared to the control group. From the social domain, there were also differences between respondents who never did physical exercise orhiba and those who routinely did physical exercise orhiba. This is because physical exercise with orhiba is usually held in groups so that social interaction in the association will be fostered in this activity. The orhiba group admitted that they rarely experienced problems in their health or experienced complaints related to menopause, which was different when compared to the control group.

Based on the results of previous studies and discussions, it can be concluded that subjectively the quality of life tends to be better in postmenopausal women who do physical exercise orhiba regularly compared to those who do not do physical exercise orhiba. The more often and regularly they do physical exercise orhiba, the better their quality of life will be, both in terms of physical, psychological, social and environmental domains in quality of life and in general health. Therefore, postmenopausal women must regularly do physical exercise, especially with Orhiba because the movement in Orhiba has a very simple method but has enormous benefits if done correctly and regularly. |
|----|----|----|----|----|----|----|----|----|
| 15 | Winda Astuti Hulu (2018) | The Relationship between Gymnastics and Quality of Life for the Early Elderly | Knowing the relationship between gymnastics and the quality of life of the early elderly | At the Medan Tuntungan Health Center | 34 samples | 45-59 years old | *Cross Sectional* Method | Based on the results of previous studies and discussions, conclusions can be drawn: 1) Gymnastics carried out on average have the characteristics of work status who do not work but have income, married marital status and who do not have chronic diseases.

2) The quality of life physically and psychologically in the elderly who took part in gymnastics was 70.6 % in good category and 29.4% in sufficient category. As for the bad category, there is none.

3) The physical quality of life who participated in the gymnastics was categorized as good and the exercise routine was 70.8 % , while the physical quality of life was categorized as sufficient and the exercise routine was only 20%. And the results of the chi square test show that there is a correlation or relationship between physical scores and exercise status. |

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							4) Psychological quality of life is categorized as good and routine exercise is 62.5 % while psychological quality of life is categorized as sufficient and routine exercise is only 40%. And the results of the chi square test showed that there was no correlation or relationship between psychological scores and exercise status. From the results of the *chi square test,* it shows that the implementation of gymnastics with physical quality of life is 100% who take part in gymnastics that are categorized as good and routinely exercised as much as 70.8% and those who are categorized as sufficient and routine exercise are only 20% with $P < 0.05$ meaning between physical scores and exercise status had a correlation or relationship, while for the psychological quality of life it was categorized as good and exercise routine was 62.5% and it was sufficient and exercise routine was only 40% with $P > 0.05$ meaning that there was no correlation or relationship between psychological scores and exercise status. . Gymnastics that is done on average has the characteristics of work status that does not work but has income, marital status is married and who does not have chronic diseases and quality of life physically and psychologically in the elderly who take part in gymnastics tends to be categorically good.
16	Hendro Wardoyo (2018)	Comparis on of the Work Effects of *Low Impact* Aerobic Gymnastic s and Walking for 45 Minutes on Reducing LDL (	*low impact* aerobic exercise and walking for 45 minutes on decreasing LDL (*low density lipoprotein*) levels in PSTW Budhi	In Bekasi, West Java	14 samples	61-85 years old	The Experiment al Method That Is By *Pre-Test And Post-Test Two Groups*	*low impact* aerobic exercise and walked for 45 minutes were as follows: 1) *low impact* aerobic exercise for 45 minutes was 10.21 mg/dl with a t-count value of 9.54 and a t-table of 2.160 with a significant level of = 0 ,05. Thus, t-count > t-table, the null hypothesis (H0) is rejected, the working hypothesis (H1) is accepted. Thus the effect of *low impact aerobic exercise* for 45 minutes has an effect on reducing LDL levels in members of PSTW Budhi Dharma Bekasi. 2) The average decrease in LDL levels for PSTW Budhi Dharma Bekasi members who participated in walking activities for 45 minutes was 4.78 mg/dl with a t value count is 11.77 and the t-table value is 2.160 with a significant level of 0.05. Thus, t-count > ttable, the null hypothesis (H0) is rejected, the working hypothesis (H1) is accepted. Thus the effect of walking for 45 minutes has an effect on reducing LDL levels in members of PSTW Budhi Dharma Bekasi.

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		Low Density Lipoprotein) Levels in Members of Pstw Budhi Dharma	Dharma members.					3) *Low Impact* Aerobic exercise activities lower LDL levels by 5.43 mg/dl compared to walking activities with a t-count value of 4.740 and a t-table value of 1.706 with a significant level of = 0.05. Thus, t-count > t-table, then (H0) is rejected and (H1) is accepted.
17	Elsa Fridayanti (2018)	The Effect of Tera Gymnastics on Sleep Quality in Elderly Women	Knowing the effect of tera exercise on sleep quality in elderly women	In Lendang Utama Hamlet, the Working Area of the UPT BLUD Puskesmas Gunungsari	30 samples (purposive sampling)	45-65 years old	*Pre Experimental,* With *One Group Pretest-Posttest Approach*	Before doing exercise, most of the respondents got the moderate category as many as 17 people (56.7%) light as many as 7 people (23.3%) and after doing the gymnastics there was an increase to the light category as many as 16 people (53.3) both 13 people (43 ,3%). The results of statistical tests with the *Wilcoxon Test* obtained p value = 0.000 or p <α = 0.05

Based on the results of research and discussion, it can be concluded as follows:
Characteristics of the age of the elderly are mostly aged 45-65 years as many as 18 people. Education of most of the elderly are not in school as many as 13 people (43.3%), work as many as 18 people (60%). The quality of sleep before exercise was carried out by the majority of moderate as many as 17 people (56.7) The quality of sleep after exercise was carried out with the most light weight as many as 16 people (53.3 %), There is an Influence of Tera Gymnastics on Sleep Quality in Elderly Women in Lendang Utama Hamlet, Working Area of UPT BLUD Puskesmas Gunungsari with p value = 0.000 (p<α i.e. <0.05) |
| 18 | Hartini (2018) | *Low Impact* Aerobic Exercise on Reducing the Percentag | *low impact* aerobic exercise on decreasing body fat percentage in supporting | In Weru District, Sukoharjo Regency | 40 samples | 45-65 years old | Experiment with Research Design "Pretest-Posttest With | Based on the results of testing the difference between the initial test and statistical analysis t-test between group 1 and group 2 obtained a value of 0.09 and ttable with N = 20, db = 20 − 1 = 19 at the 5% significance level of 1.72 . This shows tcount < ttable. Therefore it can be concluded, H0 is accepted. This means, between group 1 and group 2 before given the treatment there was no significant difference at first. |

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		e of Body Fat in Supportin g the Quality of Life of the Elderly in Rural Communit ies	the quality of life of the elderly in rural communitie s				Control Design"	Based on the results of calculating the percentage reduction in body fat, it is known that group 1 had a percentage reduction in body fat of 10.6 %. While the group 2 has a 3.4 % reduction in body fat percentage concluded, group 1 had a greater percentage of body fat loss than group 2.

B Based on the results of testing the difference between the initial test and the post-test in group 2 obtained a value of = 8.08, while t table = 1,72 . It turns out that tcount > ttable, which means hypothesis zero is rejected. Thus, it can be concluded that there is a significant difference between the results of the initial and final tests in group 2. This means that group 2 has a percentage decrease in body fat caused by the treatment given, namely the exercise program instructor. |
| 19 | Maria Theresia Bong (2019) | The Relationsh ip of Mother's Knowledg e About *Menopaus e* With Stress Level | Knowing the relationship of mother's knowledge about *menopause* with stress level | In Hoelea Village, Omesuri District, Lembata Regency, East Nusa Tenggara Province | 42 samples (*purposiv e samplin g)* | >40 years | Correlation al Analytical Design (*Corlational Study*) | *Pearson product moment* correlation analysis of the relationship between the mother's level of knowledge about menopause and stress levels in Hoelea Village, Omesuri District, Lembata Regency, East Nusa Tenggara Province in Table 4, obtained a Significant value (Sig.) = 0.025 (*p value* 0.05) which means the data was declared significant and H1 was accepted, meaning that there was a relationship between the mother's level of knowledge about menopause and the level of stress in Hoelea Village, Omesuri District, Lembata Regency, East Nusa Tenggara Province.

The results of the cross tabulation between the variables of the level of knowledge of mothers about menopause and stress levels, in Table 3, it is known that most of the mothers' knowledge levels about menopause are categorized as sufficient, namely 26 people (61.9%), there are half of the respondents who are categorized as having moderate stress levels. namely as many as 21 people (50%). There are also 3 respondents who are categorized as having sufficient knowledge but getting heavy stress.

The results of the *Pearson Product Menment analysis* also found a correlation coefficient (*Pearson correlation*) -0.411, which means that the better the mother's knowledge about menopause, the lower the stress level. The *Pearson correlation value* also shows that the contribution of |

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								the relationship between mother's level of knowledge about menopause and stress levels in Hoelea Village, Omesuri District, Lembata Regency, East Nusa Tenggara Province is 41.1% and the rest (100%-41.1%) is 58.9% influenced by other variables not examined.
								The results showed that the mother's level of knowledge about menopause was 26 people (61.9 %) and the stress level of almost all respondents was categorized as moderate stress, as many as 35 people (83.3%). The results of the analysis obtained the value of Sig. (significant) = 0.025 (*p value* 0.05) which means the data is significant and H1 is accepted, meaning that there is a relationship between the mother's level of knowledge about menopause and stress levels in Hoelea Village, Omesuri District, Lembata Regency, East Nusa Tenggara Province. It is hoped that mothers can increase their knowledge about menopause so they can get a lot of information about menopause. Judging from the results of the study that the level of knowledge of mothers about menopause is sufficient, and the level of stress experienced is moderate stress, it can be said that if the mother's knowledge is sufficient, it can trigger moderate stress. The trigger for stress is that the mother will feel anxious as a result of stopping menstruation, so that feelings of anxiety will arise, where anxiety is often associated with menopause with certain diseases.
20	Marthen Kause (2019)	*Low Impact Aerobic Gymnastics on Sleep Quality*	*low impact* aerobic exercise on the sleep quality of the elderly	At the GMIT Elderly Posyandu, Kupang City Award	36 samples	60-82 years old	*Quasy Experimental* With *Pre And Post Test Design With Control Group*	Group intervention has changed subjects who have good sleep quality that is as many as 16 people , while a total of 18 control group subjects have quality bad sleep at the moment *posttest* **.** There is significant difference in components **subjective** sleep quality, sleep latency, sleep duration, sleep disturbance, and sleep efficiency (p< 0.05), while no subject who use sleeping pills so the result is no meaningful (p>0.05). Test statistics **using the** *Mann-Whitney* test . Quality data sleep at the time of *pretest* and *posttest* on intervention group and control group normally distributed using test *Shapiro-Wilk* . Statistic test results using a paired T test with mean 8.50 at *pretest* and 3.39 seconds *posttest* and the results of statistical tests using Paired T test shows the difference both values mean p=0,000 (p<0,05). Statistical test

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							results using unpaired T test to see the difference in mean sleep quality between the intervention group and the control and the results are found *low impact* aerobic exercise which significant on the quality of sleep in the elderly with a value of p = 0.000 (p <0.05). The results of the analysis of the influence of gymnastics *low impact* aerobics on sleep quality elderly intervention group and group control with paired T test shows the significance value, respectively, p=0,000 and p=1,000. Statistic test results will be meaningful if the value of p < 0.05 . Results **analysis of the influence of** *low* aerobic exercise *impact* on the quality of sleep in the elderly intervention and control groups with see the difference in the mean after the intervention with unpaired T test shows the significance value of p = 0.000 (p<0.05) so that it can be said to be gymnastics *low impact* aerobics have influence significant effect on sleep quality elderly.

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DISCUSSION

A. Characteristics Including Age, Education, Employment and Parity

From the 20 journals, it can be concluded that the characteristics of the highest respondents are the number of children <4, followed by the marital status of the majority who are married, the level of education is low and the status of work is not working . Based on the theory put forward by Kristen B. Van Dole MA (2009) factors that can affect *Menopause Quality of Life (MENQOL)* include income, parity and education. The prevalence of *Hot Flushes* in low-income women was higher than in high-income women and the parity factor of women with parity of 4 or more children was associated with an increase in the number of *Hot Flushes* .

B. Analyzing the Literature Study of the Effect of Senorita Gymnastics on the Quality of Life of Menopausal Women

The setting of strict criteria on the method greatly affects the number of articles obtained. The determination of the articles taken was initially limited to articles that used the method *quasy experiment* research and RCTs with a range of 2015-2020. After lowering the criteria in the form of research methods, finally the articles that were obtained totaling 3 articles. The results of the literature review analysis that are in line with the research are shown in the research results in the article, research results In general, it is stated that Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) has indeed been proven to significantly improve the quality of life of postmenopausal women (Nurlina, 2017) .

Another study conducted by Ni Nyoman Sasnitiari (2016) entitled the effect of low impact aerobic exercise on reducing complaints of premenopausal women in the Merdeka Health Center Bogor area . According to the research hypothesis, it was found that there was a significant effect before and after low impact aerobic exercise, but in this study there is no control group for comparison and the sample used is only 23 respondents so that further development is needed in this study.

The results of Nurlina's research (2017) entitled the effect of Low Impact Aerobic Gymnastics on improving the quality of life of postmenopausal women, it was found that Low Impact Aerobic Gymnastics can increase the production of hypothalamic -endorphins and improve quality of life. Physical exercise with 30 minutes of aerobic exercise for 3 or 4 times will have a positive effect on the quality of life. Regular physical exercise of more than 60 minutes every day will reduce symptoms of climacterium/menopause and improve quality of life in the psychological and social domains. The quality of life that has changed the most is from the physical domain followed by the psychological domain then the social and environmental domains. *Low impact* aerobic exercise is an activity that has a positive impact on improving the function of the body's organs and also has an effect on increasing immunity in the human body after regular exercise (Guimaraes and Baptista, 2011) .

Low impact aerobic exercise if done properly, continuously with adequate intensity, can be a stimulator for the body, which can improve the quality of physical, psychological and health conditions so that the quality of life will also increase. The difference with the research hypothesis is that it combines

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the two exercises, namely the Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) for intervention so that the quality of life of postmenopausal women increases significantly.

In contrast to Hartini's research (2018) entitled the effect of low impact aerobic exercise on decreasing body fat percentage in supporting the quality of life of the elderly in rural communities, according to the research hypothesis that there is a difference in the effect of the exercise program of researchers and instructors on decreasing body fat percentage in supporting quality of life. rural elderly people. From this opinion, it can be interpreted that with appropriate movements and carried out by people who have been trained, the results obtained to improve the quality of life are much higher. According to Mangoenprasodjo (2005) , elderly sports need to be given with various benchmarks, including light or moderate loads, relatively long time and aerobic in nature. Some examples of sports that can be done by the elderly are walking, recreational sports and gymnastics. As a result of the accumulation of fat due to irregular eating patterns will cause obesity which has an impact on the narrowing of blood vessels due to being pinched by fat. The presence of fat in the body is very important, among others, to protect against cold weather, as an energy reserve when using carbohydrates, as a source of essential fatty acids, as a means of transporting fat-soluble vitamins and as a protector of internal organs . However, if the amount of fat in the body exceeds the normal state it will be a big problem. Besides the body looks less attractive, it is also susceptible to a number of diseases so that the quality of life will be disrupted. The difference with the research hypothesis is that it combines the two exercises, namely

Senam Senorita (Low Impact Aerobics and Tera) for intervention. In this study, the dependent variable was the quality of life of postmenopausal women.

Another study conducted by Marten Kause (2019) *entitled* the effect of *low* impact aerobic exercise on the sleep quality of the elderly at the Posyandu Lansia GMIT Anugerah Kupang City . experience an increase in the REM phase and the elderly can fall asleep more deeply. These results are in line with research by Nurdianingrum and Purwoko (2016) which shows that the elderly who regularly participate in elderly gymnastics have a significant improvement in subjective sleep quality. Sleep duration is the time the elderly spend sleeping per day. The average sleep duration of the intervention group increased from 4-5 hours at the *pretest* to 6-7 hours at the posttest, while the control group still had a sleep duration of 5-6 hours. These results are in line with Komsiatiningsih's (2015) research which shows that the elderly who regularly participate in elderly gymnastics experience an increase in sleep duration from 3.7 hours to 5.3 hours.

low impact aerobic exercise . *Low impact* aerobic exercise will activate the *Hypothalamic Pituitary Adrenal axis* (HPA axis) pathway to stimulate the release of -endorphins and enkephalins while increasing parasympathetic activation to reduce catecholamine and norepinephrine levels. In this study, the use of sleeping pills was not found at the *pretest* and *posttest.* The difference with the research hypothesis is that it combines the two exercises, namely Senam Senorita (Low Impact Aerobics and Tera) for intervention. In this study, the dependent variable was the quality of life of postmenopausal women.

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Other research conducted by Ahmad Dzikri Anshori (2016) entitled The Effect of Tera Gymnastics on stress levels in the elderly according to the research hypothesis, it was found that the level of stress experienced in the elderly before and after doing Tera Gymnastics. Giving Tera Gymnastics has a positive and significant effect on reducing stress in the elderly at the Sawunggaing Posyandu, so that Tera Gymnastics has an effect on reducing stress in the elderly.

Based on the results of research conducted by Siti Aisyah Zanta Pradan (2017) , entitled the effect of Tera Gymnastics on reducing anxiety levels (anxiety) in the elderly at the Tresna Werdha Hargo Dedali Orphanage in Surabaya, according to the research hypothesis. The results of the study show that Tera Gymnastics intervention can reduce anxiety or anxiety levels. According to the functional consequence theory by Miller (2009) that giving an intervention can change a negative functional consequence into a positive functional consequence. In this study, giving an intervention in the form of Tera Gymnastics can change the negative functional consequences of anxiety into positive functional consequences, namely a decrease in anxiety levels. Another opinion is by Parwati (2013) that Tera Gymnastics can improve heart and lung fitness and is achieved through increasing aerobic energy with good, correct, measurable and regular physical exercise. Most of the respondents admitted that they were comfortable when doing gymnastics. Complaints of anxiety and worry that is felt slowly disappear. This agrees with the research conducted by Raden Jaka (2015) , elderly gymnastics provides benefits for the formation of better conditions so that the elderly who routinely carry out sports activities will always feel comfortable. Comfortable conditions make individuals able to optimize functioning mental processes and also affect the individual's ability to deal with any problems that can cause stress. Gymnastics done in groups and accompanied by music can give a feeling of comfort and safety, and create a sense of joy and togetherness among the elderly. Therefore, exercise in this case elderly gymnastics can provide a role and change in the level of anxiety in the elderly. Another opinion by Bender (2007) , intense exercise can increase - endorphins . Strohl (2009) adding the production of -endorphins during exercise will make individuals happy and happy to sleep better and keep their minds fresh. In addition to physical activity and exercise , psychological and neurobiological mechanisms will appear so that anti-depressive and anti-political effects can arise which can reduce anxiety levels. Tera gymnastics is an exercise that can not only improve the quality of sleep in elderly women but can reduce the complaints experienced by elderly women because the tera gymnastics is easy to do and does not burden elderly women, the advantages of this tera gymnastics can be done without using music but using calculations and exercise duration for 30 minutes.

Based on the results of Elsa Fridayanti's research (2018) , entitled the effect of Tera Gymnastics on sleep quality in elderly women in the work area of the UPT BLUD Puskesmas Gunung Sari that exercise is an effective way to improve sleep quality. Twenty minutes of exercise per day is highly recommended to keep the body in shape and get quality sleep . In addition, the optimal secretion of melatonin and the effect of beta *endorphins* and helps increase the fulfillment of the sleep needs of the elderly

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Gymnastics stimulates a decrease in sympathetic nerve activity and an increase in parasympathetic nerve activity which affects the decrease in the hormones adrenaline, *norepinephrine* and *catecholamines* as well as vasodilation in blood vessels resulting in smooth oxygen transport throughout the body, especially the brain so that it can reduce blood pressure and pulse to normal. In this condition, it will increase the relaxation of the elderly (Rahayu, 2008) .

Tera gymnastics is an exercise that can not only improve the quality of sleep in elderly women but can reduce complaints experienced by elderly women because tera gymnastics is easy to do and does not burden elderly women, the advantages of this tera gymnastics can be done without using music but using calculations and exercise duration for 30 minutes. The difference with the research hypothesis is that it combines the two exercises, namely Senam Senorita (Low Impact Aerobics and Tera) for intervention. In this study, the dependent variable was the quality of life of postmenopausal women. The quality of life that has changed the most is from the physical domain followed by the psychological domain then the social and environmental domains.

Although the number of articles looking at the effect of interventions on the quality of life of postmenopausal women is still low However, this Senorita Gymnastics intervention has a great opportunity to be practiced in clinical settings and community, especially in Indonesia. This condition is supported by the many advantages of this gymnastic movement. Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) is easy to do because light intensity movements for a duration of 30 minutes for 3 or 4 times will have a

positive effect on quality of life . By combining the movements of the two exercises, namely the Senorita gymnastics (Low Impact Aerobics and Tera Gymnastics) which are proven to be able to improve the quality of life of postmenopausal women.

CONCLUSION

Based on the results of the literature study , conclusions can be drawn :

1. Of the several characteristics of the respondents, the highest in this study was the number of children <4, followed by the marital status of the majority who were married, the level of education was low and the status of work was not working .
2. The results of the *literature review analysis* or literature study This shows that Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) has been shown to significantly improve the quality of life of postmenopausal women **.**

SUGGESTION

1. Public health center
   It is hoped that this literature study can be an input for Puskesmas in carrying out the management of elderly gymnastics activities to be modified by adding Senorita Gymnastics movements (Low Impact Aerobics and Tera Gymnastics) to improve the quality of life of postmenopausal women.
2. Educational Institution
   It is hoped that this literature study can be used as additional theory and reading material about the effect of Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) on the quality of life of postmenopausal women.

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3. Researcher

As material to increase knowledge and insight about the effects of Senorita Gymnastics (Low Impact Aerobics and Tera Gymnastics) and further research needs to be carried out on more menopausal samples in the community to improve the quality of life of menopausal women for the better.

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THE EFFECT OF GIVING A PICTURE BOOK POCKET IS ABOUT PREVENTION OF MOTHER TO CHILD HIV TRANSMISSION TOWARD PREGNANT MOTHER'S KNOWLEDGE IN MIDWIFE INDEPENDENT PRACTICE SURYATI ROMAULI, S.S.T., M.KES

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Abstract

HIV / AIDS is a disease that continues to grow and become a global problem in the world. More than 90% of children infected with HIV are obtained from their mothers. The detection and prevention of HIV events during pregnancy must be prioritized and it is very important to reduce HIV transmission from mother to child.In carrying out the health education process, media tools are needed in the form of picture books. To find out the effect of giving a picture book on mother to child HIV prevention on the knowledge of pregnant women in the Independent Practice of Midwife Suryati Romauli, S.S.T., M.Kes.

This research is an experimental research. This research design uses Quasy Experiment, with One group pre test post test. The sample in this study amounted to 45 respondents, with a sampling technique Preposive sampling. Using the Wilcoxon statistical test.

The results of the study using the Wilcoxon test showed that the p-value = 0,000 <0.05, thus, H_0 was rejected and H_a was accepted meaning that there was a difference between pre-test and post-test, so it could be concluded that "there was an effect of giving a picture book on prevention Transmission of HIV from Mother to Child to the knowledge of pregnant women at BPM Suryati Romauli, S.S.T., M.Kes. "

Keywords: Picture book pocket, PPIA Knowledge, Pregnant women

1. Introduction (Book Antiqua 10pt Bold)

HIV/AIDS is a disease that continues to grow and becomes a global problem that hit the world. At the end of 2016 it was estimated that 36.7 million people in the world were living with HIV, as many as 1.8 million people were newly infected with HIV, and caused 1 million deaths in 2016. (WHO, 2017)

More than 90% of children in 2013 infected with HIV were obtained from their mothers. The HIV virus can be transmitted from an HIV-infected mother to her child during pregnancy, during childbirth and breastfeeding (Minister of Health of the Republic of Indonesia, 2013). According to (Drake, 2014) pregnancy and postpartum are at high risk for HIV. The risk of mother-to-child transmission is higher among the incidence of infection in women. Detection and prevention of HIV events during pregnancy or postpartum should be prioritized and is very important to reduce mother-to-child transmission of HIV (Mokoagow, 2017).

In contrast to the mode of transmission of HIV/AIDS in several areas in Indonesia, namely the use of syringes for drug users, in Papua Province, based on data from the Papua Provincial Health Office in December 2010, the transmission was 90% dominated by unsafe sexual relations, and 4% vertical transmission from mother to child. baby (perinatal). When viewed from this situation, efforts to break the chain of HIV/AIDS transmission in Papua must be aimed at changing irresponsible sexual behavior and preventing transmission from parents to their unborn babies (Rabrageri, Siswosudarmo, & Soetrisno, 2017)

The Papua Provincial Health Office noted that as of March 1, 2019, the number of people living with HIV/AIDS in the area had crossed 40,805 cases. The figures are divided into 15,935 cases of HIV sufferers and 24,870 cases of AIDS. The number of cases is data from all districts and cities in Papua province. (DinKes, 2019)

In carrying out the health education process, media is needed as a tool. The media is no stranger to the learning process. With the media, complex and unclear learning materials can be delivered to the target more simply and easily captured. The media chosen to assist the health

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education process is a picture pocket book. The media was chosen because it can help disseminate information in a relatively short time, the form of the pocket book is small and thin when compared to other. (Fauziyyah, 2018)

Previous research related to the use of pocket books (booklets) as conducted by (Artika, 2019) the results showed that booklets and leaflets had an influence in increasing adolescent knowledge about the impact of teenage pregnancy with a p-value of 0.001 < 0.05. From the results of the independent T test, it was shown that there was a difference in effectiveness between booklets and leaflets with a p-value of 0.001 <0.05. Booklets and leaflets have an influence in increasing knowledge, when compared to the two media, booklet media are more effective than leaflet media in increasing adolescent knowledge about the impact of teenage pregnancy at Pertiwi Private High School Jambi City. (Lia Artika, 2019)

According to the Jayapura District Health Office, the cumulative number of HIV AIDS cases up to December 2016 was 2281, 1246 HIV cases and 1035 AIDS cases, 242 died so that the case fatality rate was 19.41%, HIV attacks all age groups, the highest rate of HIV / AIDS attacks the productive age as many as 2115 (93%) cases consisting of 15-19 years old = 206 (10.27%) cases, 20-29 years old = 1117 (1.89%) cases, 30-39 years old = 598 (3.54%) cases and 40-49 years = 194 (10.90%) cases. (DinKes, 2019)

Based on monthly report data from the Independent Practice Midwife Suryati Romauli, S.S.T., M.Kes, from July to December 2020 there were 203 pregnant women who came to visit, with K1 as many as 120 visits, K4 as 83 visits. From the 120 K1 visits, 12 people (10%) have been counseled and have had an HIV test, the rest have received HIV counseling, but have not done an HIV test in the laboratory.

2. Method

This research is an experimental research. Experimental research is the only research method that can truly test hypotheses regarding causal relationships (Sudaryono, 2018). The design of this study used a Quasy Experiment, with one group pre-test post-test, the design in this study was an intervention group that was given treatment by giving a picture pocket book. The sampling technique in this study was preposive sampling technique, the sample in this study were all pregnant women who performed ANC K 1 at the

Independent Practice of Midwife Suryati Romauli, S.S.T., M.Kes as many as 45 pregnant women. The statistical test used to determine the difference in knowledge between before and after the intervention was the Wilcoxon test.

3. Result and Discussion

Table 1. The Effect of Providing Picture Pocket Books on The Knowledge of Pregnant Women at PMB Suryati Romauli, S.S.T., M.Kes

Variabel	Pre test		Post test		P-Value
	N	%	N	%	
Good Knowledge	18	40.0	45	100.0	000
Enough knowledge	26	57.8	0	0.0	
Lack of knowledge	1	2.2	0	0.0	

Based on the table above, it can be known using the wilcoxon test, a p-value of 0.000 is obtained. It can be seen that the p-value of 0.000 < 0.05 then it can be seen that there is a significant difference between before and after the gift of a picture pocketbook, so it can be concluded that, H0 is rejected and Ha is accepted, this shows that "there is an influence of the provision of a Picture Pocket Book on the Prevention of HIV Transmission from Mother to Child on the knowledge of pregnant women in BPM Suryati Romauli, S.ST.,M.Kes".

This is in accordance with the theory that knowledge is influenced by external factors in the form of health education by giving booklets. In accordance with the theory according to Kemm and Close in Aini (2010) booklets have several advantages, namely that they can be studied at any time, because the design is in the form of a book and contains relatively more information compared to posters.

Some respondents claimed to have never received information about through print media such as books, magazines, newspapers, or other types of print media, so researchers tried to provide information about Preventing HIV Transmission from Mother to Child through print media. The media used is print media in the form of picture pocket books. The pocketbook provided contains material on Preventing HIV Transmission from Mother to Child supported by interesting images and visualizations. A pocket book is a book with a small size the size of a pocket so that it is effective to carry anywhere and can be read at any time when needed, with the effectiveness of the pocket book, pregnant

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women can gain knowledge about Preventing HIV Transmission from Mother to Child

This means that picture pocket books are an effective medium in providing counseling because the material in them is discussed clearly and simply or briefly which facilitates understanding, especially in terms of their sense of view. (Yuliani, 2015).

This research is in line with research conducted by Lia Artika Sari (2019), saying that the difference in the average knowledge of young women about the impact of adolescent pregnancy between before and after providing education using picture pocket books has increased with a statistical test p-value of 0.001 <0.05. From the results of the independent T test, it shows that there is a difference in effectiveness between the booklet and leaflet with a p-value of 0.001 <0.05.

This is in accordance with the theory that knowledge is influenced by external factors in the form of health education by giving booklets. In accordance with the theory according to Kemm and Close in Aini (2010) booklets have several advantages, namely that they can be studied at any time, because the design is in the form of a book and contains relatively more information compared to posters.

4. Conclusion and Sugestion

The conclusion in this study is that there are differences before and after the provision of illustrated pocket books on the level of knowledge of pregnant women about PPIA at BPM Suryati Romauli, S.S.T., M.Kes in 2020 where the wilcoxon test results show a p-value (0.000) < α 0.005.

It is hoped that in the future, a picture pocket book on Preventing HIV Transmission from Mother to Child can be used as a source of information to increase the knowledge of other pregnant women who visit AT PMB Suryati Romauli, S.S.T., M.Kes. and can be used as input for education in the learning process of obstetrics students, so that a real picture of the influence of picture pocketbook-based about PPIA can be obtained on increasing the knowledge of pregnant women.

5. Acknowledgements

Thank you very much to the director of poltekkes of the Ministry of Health Jayapura, the head of the center for research and community service poltekkes of the Ministry of Health Jayapura, Midwife Suryati Romauli, S.ST., M.Kes

for her support and permission to conduct this research, as well as all midwives and pregnant women who have been willing to help in this research.

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Publisher : Politeknik Kesehatan Kemenkes Semarang 2022

APPLICATON OF NARRATIVE THERAPY TO MENTAL HEALTH CADRES

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Abstract

Assistance for people with mental disorders in community is coordinated by community stakeholder through the mental health alert village program. The importance of the role of mental health cadres in assisting people with mental disorders is influenced by their activities in detecting, mobilizing, referrals and reducing stigma on people with mental disorders in community. The purpose of this community service was to apply the application of narrative therapy to mental health cadres in detecting, assisting, referencing and reducing public stigma against people with mental disorders. The method used is lecture, question and answer, discussion, application of narrative therapy to mental health cadres. After the application of narrative therapy was administered, we find out the performance improvement using a material understanding test. The instruments was carried out before and after the implementation of the activity. The result is that before the activity is carried out, the cadre's work performance before the activity is in the sufficient category 60 and after the activity 80 is in the good category. This community service activity is carried out continuously by involving village heads and community leaders as a refresher activity for mental health cadres so as to improve the work performance of health cadres.

Keywords: *mental health adres, narrative therapy, assitance of people with mental disorder*

1. Introduction

To explore mental health problems in the community, information is needed about environmental, socio-economic, cultural, behavioral and mental health events and conditions related to predisposing and precipitation factors as well as public attitudes towards mental health. Mental health efforts. Promotive efforts are carried out to improve mental health for individuals, families, groups and communities by providing public mental health counseling, improving individual mental health, mental health counseling in various age ranges from in the womb to old age, recreation. Preventive efforts are aimed at preventing the occurrence of mental health disorders for individuals, families, groups and communities through stimulating activities for the growth and development stages of pregnant women to the elderly regarding. developmental tasks, characteristics of normal and abnormal stages of growth and development. Activities are carried out on the basis of awareness, willingness and initiative of the community itself, in the sense that activities begin with activities to overcome health problems that are indeed felt by the community itself as a need.

The results of this community service will be effective in efforts to strengthen the personal character and self-identity of mental health cadres in personality development so that the personality character of adolescents increases. Narrative therapy is part of efforts to build personal character and self-identity of mental health cadres in developmental tasks so as to achieve a personality with character. Nuryono (2012) suggests that the use of narrative counseling has an impact on changing the narrative of self-acceptance. These changes are shown in the ability to identify actions that are not predictable by problems, protests against previous self-acceptance, processes of reflection and reconceptualization, and the emergence of changes in the new narrative.

Based on the results of interviews with the village head, many cadres in the village of Kalegen Puskesmas Bandongan have not received a refresher on the duties of cadres in detecting, assisting, referring and reducing community stigma. The application of narrative therapy is needed in increasing self-awareness of the role of mental health cadres in society. Through this therapy, it is hoped that cadres will

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have insight and skills in helping people with mental disorders to function optimally in society.

2. Method

The methods used in this community service activity are lectures, examination discussions, demonstrations. The activity begins by analyzing the situation and solving problems through studies in terms of community empowerment strategies, advocacy, atmosphere building and partnerships. At this stage, the intervention targets and intervention methods are also determined in the form of preparing educational materials or media. Educational materials include instructions or guidelines on how to care for people with mental disorders, efforts to maintain social functioning of people with mental disorders. The next stage is the implementation of narrative therapy interventions on predetermined targets. Intervention activities include the formation and mobilization or empowerment of mental health cadres through narrative therapy. All stages of activities will be monitored and evaluated at the last stage. Each mental health cadre will then be given assistance for 1 month and given further educational media using the narrative therapy module that was prepared previously. The purpose of this stage is to deepen understanding and improve the ability of mental health cadres in treating people with mental disorders and optimizing the social functions of people with mental disorders.

Prior to carrying out this activity, coordination with the sub-district, village heads and heads of health centers was carried out to obtain permits. service from the Bandongan sub-district, the service implementation team and the village village head identified the problems that were being experienced by the cadres, namely there was no refresher on the appearance of mental health cadres in the community. The community service team and village apparatus determine the location of the activity program that will be given to the cadres, namely the implementation of narrative therapy using modules and books. The implementation of this activity was carried out for 6 sessions, namely from March to May 2022.

The number of cadres who take part in this activity is 28 mental health cadres. The location for the implementation of the activity is in the village of Kalegen, the working area of the Bandongan Health Center. The instrument used was a cadre work performance questionnaire.

The instrument to determine changes in the work appearance of cadres before and after the activity contains 12 statements with 3 items always 3, sometimes 2, never 1. The cadre's work performance scores consist of a low category with a score range of 33-55, an adequate category with a score range of 56-80, and a good category with a score range of 81-100.. At the evaluation stage, it is carried out to find out the obstacles and constraints during the implementation of activities.

Narrative therapy application for mental health cadres consists of 6 sessions using workbooks and modules. Each session will be described as follows: 1. First session : Root. In this activity, self-introduction to mental health cadres was carried out. The goal is to provide an assessment of personal identity and quality. O'Hanlon (2005) states that this session is designed to help someone rethink the identity and qualities of someone who has problems based on explanations and exceptions to their abilities. In this session, there were 6 questions that were discussed with mental health cadres to find out the roots in the family, how important the family is and its influence in today's life, the most beautiful memories in the family and how the mental health cadres share their roles as cadres and as members of the family. 2. Second Session: Land. In the second session, there was an introduction to the influence of the environment on self to mental health cadres, family, and culture. O'Hanlon (2005) states that this session is designed to help a person rethink the process of how the environment influences habits, decisions and behavior in everyday life. Through discussions and questions and answers, mental health cadres share their experiences about what and how the environment affects their daily lives, and their favorite places to visit. 3. Third Session: Trunk. This session focuses on the ability to respect oneself and others in solving a problem from a different point of view. O'Hanlon (2005) states that this session is designed to help someone describe the problems they face based on their own abilities so that they are able to respect themselves and respect others who have different perceptions. Mental health cadres are given the opportunity to describe their skills and abilities which include talents, hobbies, awards and weaknesses that become problems in life. 4. Fourth session: Branch. This session focuses on hope, happiness and success as well as problems faced by mental health cadres and what to do or think about when experiencing problems through adaptive or

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maladaptive behavior. 5. Fifth session: leaves. This session is designed to give mental health cadres the opportunity to re-plan their future through various possibilities and roles and the most important people in their lives, 6. Sixth session: fruit. This session is designed to give mental health cadres the opportunity to make changes to achieve future plans.

3. Result and Discussion

Community service activities were carried out in a structured manner for 3 months, running smoothly and the enthusiasm of the cadres when carrying out the activities was very good. This activity received positive support from the Bandongan puskesmas by granting permits and providing facilities for the implementation of service. In addition, the role of the village midwife also supports and contributes to the smooth running of this community service activity.

Figure 1. Applicaton of narrative therapy to mental health cadres

The activities for this meeting provided the application of narrative therapy to mental health cadres in increasing self-awareness about being mental health cadres. The importance of mental health cadres knowing the material is that mental health cadres have enthusiasm and motivation in detecting, assisting, referring, and reducing the stigma of people with mental disorders in the community.

Figure 2. Evaluation of the applicaton of narrative therapy to mental health cadres

Table 1. Socio demographc variables at baseline

Variables	N	%
Age		
<35 years	9	32
≥ 35 years	19	68
Sex		
Male	5	18
Female	23	82
Education		
<9 years	11	39
≥ 9 years	17	61
Marriage status		
Married	25	89
Divorce	3	11
Occupational status		
Government	6	21
employee	22	79
Private employee		

Based on table 1. The characteristics of the 28 cadres as participants in community service are 82% of female cadres, 61% of more than 9 years of education, 89% married, and 79% working in the private sector.

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Table. 2 The appearance of the role of mental health cadres before and after the application of narrative therapy (N=28)

Work performance	Pre test		Post test	
	N	%	N	%
Dissatisfied	0	0	0	0
Neutral	23	82	18	64
Satisfied	5	18	10	36

Based on table 2. It can be seen that the work performance of mental health cadres before the activities in some categories is sufficient by 82% and in the good category as much as 18%. The work performance of mental health cadres after the activity has increased with the number of cadres who have good knowledge to 36%, and cadres who have sufficient knowledge decreased to 64%.

Table 3. The change of cadres' work performance score

Work performance	Mean	95% CI		t	P value
		Lower	Upper		
Before	72	8.25	6.19	3.08	.001
After	80				

Based on Table 3. Shows the results that the average value of cadre work performance before the activity is 72 and after the narrative therapy application activity increases to 80 with an increase in the average knowledge value before and after is 8 with a p value of 0.001) meaning there is a significant change for mental health cadre work performance.

4. Conclusion and Sugestion

This community service activity concluded that the application of narrative therapy was able to improve the work performance of mental health cadres in carrying out their roles in the community. The average score of cadres before activities is 72 and after activities 80. This activity can be carried out periodically so that it can be a refresher activity for cadres so as to improve the work performance of cadres, especially in detecting, assisting in making referrals and reducing stigma to people with mental disorders in the community

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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THE FAMILY READINES FOR FETAL EMERGENCY TREATMENT OF PREGNANT MOTHERS WITH CHRONIC ENERGY DEFICIENCY (CED)

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ABSTRAK

Background: The Number of CED pregnant in Pekalongan in 2016 are 803 (12.6%) of all pregnant women increased to 869 (13.7) in 2017. Meanwhile, in 2018 in Pekalongan City area, according to the Central Statistics Agency (BPS) Pekalongan City, there were 898 cases pregnant women with CED. Data from the Pekalongan City Health Office in 2017 the number of maternal deaths are 10 people is the 13th order of all cities and regencies in Central Java, the highest cause of death because of eclampsia and maternal bleeding. Therefore, it is necessary to identify the readiness for handling fetal emergencies in the families of pregnant women with CED.

Aim: The purpose of this study was to determine the of knowledge level of the families of pregnant women with CED about handling and deciding about fetal emergencies in pregnant women with CED.

Methods: The research method used in this research is descriptive. This study tried to explore the family's knowledge about handling emergency fetal in CED pregnant women.

Results: The results of this study that are lack of family knowledge related to handling in the event of a fetal emergency in pregnant women with CED. Lack of knowledge can cause ineffective decision making so that the risk in fetal emergencies will be higher.

Conclusion: It is necessary to provide interventions to increase family knowledge and readiness in dealing with fetal emergencies in families of pregnant women CED.

Keyword: Chronic Energy Deficiency, Emergency, Fetal Emergency

INTRODUCTION

Chronic Energy Deficiency (CED) is a condition caused by an imbalance in nutritional intake between energy and protein, so that the nutrients needed by the body cannot be met. Pregnant women who are known to suffer from CED judging from the measurement of upper arm circumference (LILA) of pregnant women with the risk of CED is less than 23.5 cm. (DepKes RI, 2014).

Pregnant women who suffer from CED have a risk of sudden maternal death during the perinatal period or risks during the delivery of the baby. In this situation, many mothers die from bleeding so that it will increase the mortality rate of mothers and babies.

According to Basic Health Research (RISKESDES) data in 2018, it showed that the proportion of pregnant women experiencing CED in Indonesia was 17.3%. The

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highest number of pregnant women who experience CED according to province is in East Nusa Tenggara at 36.8% while in South Kalimantan Province it is 17.5% (Ministry of Health RI, 2018). The number of pregnant women with CED in Pekalongan city in 2016 was 803 (12.6%) from all pregnant women increased to 869 (13.7) in 2017 (Pekalongan City Health Office, 2017). Meanwhile, in 2018 in the Pekalongan City area according to the Central Statistics Agency (BPS) of Pekalongan City, there were 898 cases of pregnant women with CED. Data from the city health office in 2017 the number of maternal deaths of 10 people was 13th out of all cities and districts in central Java, the highest direct cause of death due to eclampsia and the second place due to bleeding. Indirect causes of death of pregnant women include anemia and chronic lack of energy.

Pregnant women who suffer from chronic energy deficiency are at risk of sudden perinatal death or the risk of giving birth to babies with low birth weight (LBW). According to data from WHO, the mortality of pregnant women in the world in 2015 was 216 per 100,000 live births or it can be estimated that the number of maternal deaths was 303,000 deaths with the highest number found in developing countries of 302,000 deaths.

CED in pregnant women can cause risks and complications, including: anemia, bleeding, mother's weight does not increase normally, and can be exposed to infectious diseases. CED in pregnant women can affect the process of fetal growth and can cause miscarriages, abortions, stillbirths, neonatal deaths, congenital defects, anemia in infants, intra-partum asphyxia (die in the womb) and birth with low birth weight (LBW). (Aminin, 2016). Family knowledge can be the key to handling emergencies in pregnant women. Research was conducted by (Mursidah & Widyastuti, 2011) shows that knowledge of danger signs in pregnant women can help make decisions in the selection of treatments so that there is no emergency. In addition, research conducted by rondonuwu et al (2019) showed that family knowledge about emergency signs can prevent sudden death in either the mother or fetus. The danger that can occur in the mother with the death of the fetus in the womb can cause blood clotting disorders, caused by substances coming from dead tissues that enter the mother's blood.

METHOD

The research method used in this study is descriptive. This research aims to describe or describe a condition objectively such as the theory presented by Notoadmojo (2018). This study tries to explore family knowledge about emergency management in pregnant women with CED. This study used a cross sectional design. Cross-sectional research is a study aimed at studying the dynamics of the relationship between Dafiu (2017), a questionnaire containing 30 questions about pregnant women of CED. The respondents used were 60 family members of pregnant women with CED.

RESULT

Characteristics of Respondents
The characteristics of respondents in this study include age and gender. The age

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in this study was categorized according to WHO (2015), to be early adult (26-35 years), late adult (36-45 years), and early elderly (46-65 years). Data on the characteristics of respondents are presented the following table.

Table of Respondents' Characteristics By Gender, Age, and Employment Status

Variable	Control	
	f	%
Gender		
Man	47	78,33
Woman	13	21,67
Total	**60**	**100,0**
Education Level		
SD		
JUNIOR	9	15
SMA	18	30
College	15	25
	18	30
Total	**60**	**100,0**
Work		
Medical	0	0.0
Non-Medical	54	90.0
Not Working	6	10.0,
Total	**60**	**100,0**
Age		
Early Adulthood	24	40.0
Late Adult	24	40.0
Early Seniors	12	20.0
Total	**60**	**100,0**

Based on the table above, the researcher obtained some data. Here is the data obtained, of the 260 respondents who had a male sex there were 47 people (78.33%) while those who had a female sex were 13 people (21.67), respondents with the last elementary education there were 9 people (15%), junior high school 18 people (30%), high school 15 people (25%), college 18 people (30%). For the type of work of respondents with non-medical categories there were 54 people (90%), Not working 6 (10%). The age categories of respondents were as follows, early adults 24 people (40%), Late Adults 24 people (40%), Early Elderly 12 people (20%).

Level of Family Knowledge about Emergencies in Pregnant Women with CED

The level of knowledge of the family of pregnant women with CED is presented in the following table

Table of Knowledge Level of Pregnant Women with CED

No.	Knowledge	Control Group	
		Frequency	Percentage
1	Good	6	10 %
2	Enough	24	40 %
3	Less	30	50 %
	Sum	60	100 %

Table 5.2 presents a table of the level of knowledge of families of pregnant women with CED. Family members who have a good level of knowledge there are 6 people (10 %,). There are 24 family members who have a sufficient level of knowledge (40%), and those with a knowledge level of less than 30 people (50%).

DISCUSSION

The results of research related to education showed the last few categories background of education in respondents. There were 3 respondents with education at the elementary school level, 6 respondents with education of junior high school, 5 respondent educations in high school and 5 respondents with college education. The educational status can affect a person's level of knowledge. According to Notoatmodjo (2003), a person's level of knowledge can influence behavior in decision-making in his life. Family decision-making in caring for pregnant women with Chronic Energy Deficiency

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(CED) can be vital. Decision-making errors can result in an emergency in both the fetus and the mother.

Based on the results of a survey conducted by researchers related to the level of knowledge in respondents, it was found that there were 2 people (10%) who had a good level of knowledge, 8 people (40%) had a sufficient level of knowledge and 10 people (50%) were still lacking in terms of knowledge about handling fetal emergencies in pregnant women with CED. According to Fitrianingtyas, (2018), the level of knowledge can influence family behavior in decision making. For example, when pregnancy problems occur such as cravings, the family prefers to take the pregnant woman to a herbalist, so that the detection of worsening the condition becomes weak. This inaccuracy of decision-making can trigger an emergency.

The family became the first helper when there was an emergency at home. CED pregnant women are no exception. According to Waryono, there are several risks that can occur in pregnant women with CED, namely, anemia, bleeding and infectious diseases. The impacts that can occur on the fetus are abortion, the baby is born dead, anemia in the fetus, congenital defects and babies with low birth weight. In addition, in pregnant women, CED is also very likely to occurred difficult and long childbirth, premature delivery and bleeding. In the opinion of the researcher, the family knowledge of pregnant women with CED must be improved because it can affect readiness in case of sudden emergency in the fetus or mother.

Families need to get information about the characteristics of pregnant women with CED. The characteristics of pregnant women with CED are the weight less than 40 kg or look thinner and LILA less than 23.5 cm (Supariasa, 2002, p.48). Pregnant women with these symptoms should get extra attention from the family. Families who have a good level of knowledge can at least provide care independently at home. So, the risk of CED pregnant women can be reduced. If things get worse, the family will be able to make the right decisions so as not to harm the mother and fetus.

CONCLUSIONS AND SUGGESTIONS

Based on the results of the research above, it can be concluded that it is necessary to provide interventions to increase family knowledge and readiness in handling fetal emergencies in the families of pregnant women in CED. Increasing knowledge is needed to increase family knowledge so that the possibility of worsening in pregnant women with CED can be handled properly.

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PROCEEDINGS 4th INTERNATIONAL CONFERENCE ON HANDLING NON-COMMUNICABLE DISEASES (3ndICHNCDs) "Education Transformation through Empowering Education and Health Professionals in Global Era" Wednesday, June 14, 2022

Publisher : Politeknik Kesehatan Kemenkes Semarang 2022

The Urgent of Making Tanjungpinang's Regulation concerning Smoke-free Area (Normative Juridical Perspective)

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Abstract

"Everyone has the right to live in physical and spiritual prosperity, to have a place to live, and to have a good and healthy living environment and the right to health services" in accordance with Article 28H paragraph (1) of the 1945 Constitution of the Republic of Indonesia. This study aimed in the form of tobacco products for health, the regional government is obliged to create a smoke-free area by establishing legal instruments in the form of laws and regulations in order to guarantee the creation of certainty, protection, and legal justice. The normative juridical method is carried out through a literature study that examines primary and secondary data in the form of legislation, research/study results, and other references. Smoke-free areas which are or are included as public service facilities are also the responsibility of the state to administer them properly as referred to in the Constitution, so that it is necessary to follow up with their arrangements in regional regulations to provide certainty, protection, and legal justice to individuals, families and communities. In essence, the regulation of smoke-free area in the Tanjunginang City Regional Regulation is a form of effort to fulfill human rights and constitutional rights in the health sector.

Keywords: *regulation; smoke-free area; human right*

1. Introduction

Cigarettes are one of the tobacco products intended to be burned and smoked and/or inhaled, including kretek cigarettes, white cigarettes, cigars or other forms produced from the plants nicotiana tabacum, nicotiana rustica, and other species or their synthetics whose smoke contains nicotine and tar., with or without additives. Consumption of tobacco products in the form of cigarettes as intended, can interfere, endanger, and harm the health of individuals, families, communities, and the environment (UU 36 tahun 2019).

According to WHO, every 10 seconds in the world there is one case of death due to smoking and in a year there are 4.9 million deaths, of which 70% occur in developing countries. Therefore, controlling smokers who produce cigarette smoke which is very harmful to the health of active smokers and passive smokers, is one solution to breathe clean air without being exposed to cigarette smoke, which is a constitutional right and human right, which is commonly referred to as the determination of the area No moking (KTR)(Pusat Promosi Kesehatan Kemenkes 2011).

KTR as intended is a manifestation of the Universal Declaration of Human Rights (UDHR), which states that "everyone has the right to live at a standard that is adequate for their health and well-being, including the right to food, housing and health services". KTR is also a tangible form of certainty, protection, and legal justice for non-smokers against exposure to other people's cigarette smoke. Other people's cigarette smoke as referred to is a combination of smoke from the tip of a lit cigarette, which has a toxic content of 3 (three) times the main smoke, and is often added to the smoke exhaled by the smoker. (Susetiyo, Perdana, and Iftitah 2021)(Fei et al. 2016).

The national smoking prevalence is 28.5%. The prevalence of smoking by sex in men was 59% and women 1.6%. According to place of residence, the prevalence of smoking in rural and urban areas is not too much different, however, in rural areas it is slightly higher (29.1%) compared to urban areas (27.9%). According to age group, the highest prevalence was at the age of 40-49 years at 39.5%, while at the young age (<20 years) it was 11.1%(KEMENKES RI 2016). Based on the results of the March 2016 National Social and Economic Survey (SUSENAS), the

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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average percentage of expenditure per capita per month spent on cigarettes (6.72) is much higher than fish/shrimp/squid/shellfish (3.55) , meat (2.17), eggs and milk (2.96), and vegetables (3.65) (Kemenkes 2017).

The average monthly per capita expenditure (rupiah) by food group (tobacco and betel) in Tanjungpinang City in 2015 was 68,490; in 2016 amounted to 83.801; and in 2017 it was 70,357. Meanwhile, the average percentage of expenditure (%) in 2015 was 10.54; in 2016 of 13.36; and in 2017 it was 8.32 (BPS Kota Tanjungpinang 2017).

In accordance with hospital data in Tanjungpinang City in 2016-2017 regarding diseases related to smoking (COPD, heart, TB, Nasopharyngeal CA, Lung CA) at Tanjungpinang City Hospital, Raja Ahmad Tabib Hospital, and Rumkital dr. Midiyato S in 2016 amounted to 775 cases and in 2017 amounted to 1,164 cases. The cost of treating smoking-related diseases will be a burden for the state (region) and households, because the health insurance system is applied to the entire population, so the costs of diseases related to smoking will consume existing sources of funds. The source of state (regional) health financing comes from taxes (including premiums/contributions) paid by the public. Smokers will pass the cost of their disease on to others who don't smoke, this is very unfair and detrimental (Juanita 2012).

Based on the description above, tobacco control in Indonesia is one of the efforts to control non-communicable disease risk factors (PTM), in order to reduce the prevalence of PTM. Efforts to control PTM risk factors that have been carried out are in the form of promoting Clean and Healthy Living Behavior (PHBS) through CERDIK behavior, namely regular health checks, getting rid of cigarette smoke, diligent physical activity, balanced healthy diet, adequate rest, and managing stress. (Kementerian Kesehatan Republik Indonesia 2017).

The control of the PTM risk factors mentioned above is the responsibility of the government to fulfill the people's right to live a healthy life. The government plays a role as a determinant of a policy that should be implemented by the community. As is well known, the government implements various policies with various objectives. These objectives must be based on the principles of governance, including the principles of public service delivery. One of the government policies in public services, especially in the health sector is the KTR policy. This public policy in the health sector imposed by

the government is closely related to the program that aims to provide guidance to the community in realizing people's behavior to live clean and healthy (PHBS program) (Fei et al. 2016).

2. Method

Research was also carried out in the context of the preparation of the 2019 Tanjungpinang City Regional Regulation Draft regarding Non-Smoking Areas through the preparation of an academic text which is a reference or reference in the preparation and discussion of the Regional Regulation Draft. Preparation of Academic Papers is basically a research activity that uses legal research methods (UU Formation of Legislation). The approach of this study was carried out using a normative juridical method. The normative juridical method is carried out through a literature study that examines (mainly) primary and secondary data in the form of laws and regulations, other legal documents, research results, study results, and other references (UU Formation of Legislations).

The normative juridical research method is a literature research that makes a systematic, factual, and accurate description or description of the facts, nature, and relationships between the phenomena or phenomena being studied while analyzing them, namely looking for the cause and effect of a thing and describing it consistently and systematically and logically. . This study analyzes data in the form of consistent, logical, effective, and systematic sentences (Fei et al. 2016).

Normative legal research portrays law as a prescriptive discipline that sees law from the point of view of its norms. The collected legal materials are classified, analyzed by exploring the basic principles, values and norms contained therein. Furthermore, cross-checks are carried out with other laws and regulations to find the level of synchronization/harmonization, is there any consistency between the laws and regulations. The data analysis was carried out qualitatively by examining the logic of thinking deductively. The results of the study are presented in the form of a systematic description (Susetiyo et al. 2021).

3. Result and Discussion

The 1945 Constitution of the Republic of Indonesia emphasizes that "Protection, promotion, enforcement and fulfillment of human rights are the responsibility of the state, especially the government" and "To uphold and

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protect human rights in accordance with the principles of a democratic rule of law, the implementation of human rights is guaranteed. , regulated, and set forth in the legislation". Furthermore, "Local governments carry out autonomy to the fullest extent, except for government affairs which are determined by law to be the affairs of the Central Government" and "Regional governments have the right to stipulate regional regulations and other regulations to carry out autonomy and assistance tasks". This provision is followed up in Article 236 paragraph (3) letter b of Law Number 23 of 2014 concerning Regional Government which confirms that "Perda contains material which is a further elaboration of the provisions of higher laws and regulations".

The provisions in the 1945 Constitution of the Republic of Indonesia which contain the protection, promotion, enforcement and fulfillment of human rights, which in this context is a No Smoking Area, are in line with the Framework Convention On Tobacco Control (FCTC) 2003 which is a global action for tobacco control in various areas. aspects, such as controlling promotion, sponsorship and advertising of tobacco products, protection for passive smokers, packaging and labeling of tobacco product packaging, tobacco tax and excise, and eradicating the smuggling and illegal sale of tobacco and its products. The FCTC as referred to has also been followed up by WHO, by issuing 6 (six) tobacco impact control strategies called (acronym) with MPOWER, consisting of Monitor tobacco use and its prevention policies, Protection against cigarette smoke, Optimize support for smoking cessation, Alert the public to dangers of tobacco, Eliminate tobacco-related advertisements, promotions and sponsorships, and Achieve tobacco excise increases (Wibisana et al. 2008).

Provisions in the 1945 Constitution of the Republic of Indonesia and Law Number 23 of 2014 concerning Regional Government which contain the authority of regional governments to stipulate regional regulations which in this context are Non-Smoking Areas, are one of the health resources in the input subsystem, namely regulations or statutory regulations. which will later support the process subsystem, namely health efforts to achieve the output subsystem, namely health development goals, as referred to in Presidential Regulation Number 72 of 2012 concerning the National Health System. In addition, regional regulations are explicitly included in the types and hierarchies of statutory regulations, which the formation is carried out by the Regional Head together with the DPRD (collaboratively), and must have an academic text like the law, this is regulated by Law Number 12 of 2011 concerning the Establishment of Legislation.

Article 115 paragraph (2) of Law Number 36 of 2009 concerning Health states that "Local governments are obliged to establish a smoke-free area in their territory". The Non-Smoking Area (KTR) consists of "health service facilities, places for teaching and learning, places for children to play, places of worship, public transportation, workplaces, public places, and other designated places".

The provisions in Law Number 36 of 2009 concerning Health which contain the obligation for local governments to establish KTR, are a manifestation of the health development goals, namely to increase awareness, willingness, and ability to live healthy for everyone in order to realize the highest degree of public health, as investment for the development of socially and economically productive human resources. The health development goals are a reflection of the constitutional rights of citizens and at the same time are human rights and basic human obligations in the health sector. Health as an investment is if there are things that cause health problems to the community, it will cause big economic losses for the country, and every effort to improve the health status of the community also means an investment for the development of the country.

KTR as referred to in Article 1 number 11 of Government Regulation Number 109 of 2012 concerning Safeguarding Materials Containing Addictive Substances in the Form of Tobacco Products for Health, is "a room or area that is declared prohibited for smoking activities or for producing, selling, advertising, and/or promoting activities. Tobacco Products". Cigarettes are defined as "one of the tobacco products intended to be burned and smoked and/or inhaled, including kretek cigarettes, white cigarettes, cigars or other forms produced from the plants nicotiana tabacum, nicotiana rustica, and other species or their synthetics whose smoke contains nicotine. and tar, with or without additives". Tobacco Products include "Cigarettes and other Tobacco Products whose use is mainly by burning and smoking and/or inhaling the smoke, which contains Addictive Substances and other materials that are harmful to health". In addition to tobacco products as referred to in paragraph (1), "Tobacco Products

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containing nicotiana tabacum, nicotiana rustica, and other species and/or their processed products, including synthetic manufacture of the same type and nature or similar to those produced by nicotiana species and their use by burning and smoking and/or or inhaled the smoke is included in the provisions of Government Regulations". With regard to the foregoing, "Ministers, relevant ministers, Heads of Agency, and Regional Governments in accordance with their respective authorities shall provide guidance on the implementation of safeguarding Tobacco Products as Addictive Substances for health by:

a.   realizing a No Smoking Area;

b.   preventing novice smokers and conducting smoking cessation counseling;

c.   provide information, education, and develop the community's ability to behave in a healthy life;

d.   cooperate with international agencies/or institutions or community organizations to provide protection for tobacco products as addictive substances for health in accordance with the provisions of laws and regulations; and

e.   give awards to persons or entities that have rendered services in assisting the implementation of the security of tobacco products as addictive substances for health".

The provisions in Government Regulation Number 109 of 2012 concerning the Safeguarding of Materials Containing Addictive Substances in the Form of Tobacco Products for Health which contains the definition of Areas Without Cigarettes, Cigarettes, Tobacco Products, and the government's authority in providing guidance, have complied with the principles/principles (Widyastuti Wibisana et al, 2008): 1) protect the health of individuals, families, communities and the environment from the dangers of materials containing carcinogens and addictive substances in tobacco products that can cause disease, death, and reduce the quality of life; 2) protect the population of productive age, children, adolescents, and pregnant women from environmental incentives and the influence of advertisements and promotions for the initiation of the use of and dependence on materials containing Addictive Substances in the form of Tobacco Products; increase public awareness and awareness of the dangers of smoking and the benefits of living without smoking; and protect public health from other people's cigarette smoke.

As the implementation of the above regulations, a Joint Regulation of the Minister of Health and the Minister of Home Affairs Number 188/MENKES/PB/I/2011 and Number 7 of 2011 concerning Guidelines for the Implementation of Non-Smoking Areas was stipulated, which among other things stipulates that "Regional regulations at least contain regulations regarding KTR, community participation, establishment of a KTR enforcement task force, prohibitions and obligations, and sanctions. Furthermore, "The Minister of Home Affairs through the Director General of Community and Village Empowerment has the task of encouraging local governments to establish and implement KTR in their respective regions, facilitate local governments in the preparation and implementation of provincial and district/city Regional Regulations regarding KTR, and empower the community in implementing KTR".

The provisions in the Joint Regulation of the Minister of Health and the Minister of Home Affairs Number 188/MENKES/PB/I/2011 and Number 7 of 2011 concerning Guidelines for the Implementation of Non-Smoking Areas which contain the implementation of KTR in regional regulations and the duties of the Minister of Home Affairs, constitute a micro (collaborative) policy. which are technical in nature and operational, while the macro policies that are principal and managerial are Law Number 36 of 2009 concerning Health and Government Regulation Number 109 of 2012 concerning Safety of Materials Containing Addictive Substances in the Form of Tobacco Products for Health.

With regard to KTR, Law Number 44 of 2009 concerning Hospitals states that "the hospital's obligation is to treat the entire hospital environment as a smoke-free area". Likewise, Law Number 35 of 2014 concerning Amendments to Law Number 23 of 2002 concerning Child Protection which contains provisions regarding "The Government and Regional Governments in carrying out maintenance and care must seek and assist children, so that children can obtain playing facilities. that meet health and safety requirements.

The provisions in Law Number 44 of 2009 concerning Hospitals which contain the obligation for hospitals to implement KTR, are a follow-up to Law Number 36 of 2009 concerning Health which explicitly lists health service facilities as KTR. Furthermore, in accordance with the Joint Regulations of the Minister of Health and the Minister of Home Affairs Number 188/MENKES/PB/I/2011 and Number 7 of 2011

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concerning Guidelines for the Implementation of Non-Smoking Areas, "KTR in the form of health service facilities, places for teaching and learning processes, places for children to play , places of worship, and public transportation are prohibited from providing a special place for smoking and is a KTR that is free from cigarette smoke to the outer limit".

The provisions in Law Number 35 of 2014 concerning Amendments to Law Number 23 of 2002 concerning Child Protection which contain an obligation for the government to organize children's play facilities that meet health and safety requirements, are a follow-up to Law Number 36 of 2009 concerning Health. which explicitly lists where children play as KTR. Furthermore, in accordance with the Joint Regulations of the Minister of Health and the Minister of Home Affairs Number 188/MENKES/PB/I/2011 and Number 7 of 2011 concerning Guidelines for the Implementation of Non-Smoking Areas, "KTR in the form of health service facilities, places for teaching and learning processes, places for children to play , places of worship, and public transportation are prohibited from providing a special place for smoking and is a KTR that is free from cigarette smoke to the outer limit".

Legislation requires a foundation in its formation, which consists of philosophical, sociological, and juridical to address the needs and problems that occur in society. Philosophically, the laws that are formed must reflect the philosophy of life of the Indonesian nation in the form of noble values, ideals, and views of life that are accumulated in Pancasila and the 1945 Constitution of the Republic of Indonesia. Sociologically, the formation of regulations must provide a picture or reflection of the reality of life in society that includes the needs or demands of the actual problems faced. So, if the law is built on a basis that is not in accordance with the social structure in society, it is certain that the community's resistance to the law will be very large or strong. Juridically, laws and regulations must be used as the basis for the preparation of regulations (Suryani and Suhartini 2019).

KTR is a tangible form of legal protection for passive smokers from exposure to cigarette smoke from active smokers set by the government through regulations. The government in carrying out the function of legal protection related to the guarantee of human rights from the Indonesian Constitution for a healthy life and a healthy environment, consists of preventive and repressive legal protection. Preventive legal protection is legal protection that aims to prevent disputes, which directs government actions to be careful in making decisions based on discretion, while repressive legal protection is legal protection that aims to resolve disputes (Susetiyo et al. 2021).

Legislation will be effective in its implementation, if enforced consistently, both by the makers, law enforcement officers, and the community. Efforts to enforce regulations consist of preventive and repressive measures. Preventive efforts are in the form of preventing violations of regulations with outreach activities, coaching and providing guidelines, as well as monitoring and evaluation. Repressive efforts are carried out through the imposition of sanctions for violators. The repressive efforts referred to are regarding law enforcement, which is a process to make the wishes of the law (i.e. the thoughts of the legislatures formulated in legal regulations) a reality.(Juanita 2012).

Legislation requires principles in its formation, which include the principle of benefit. The basis of a law is a principle and one of the principles of the formation of regulations is the principle of benefit. A legal provision can be said to be good if the provision can provide the maximum benefit to the community. To be useful, a regulation must meet the elements of the principle of benefit, namely elements of usefulness, justice, consequences of an action, satisfaction of the public interest, and protection for the parties through legal certainty(Fei et al. 2016).

KTR must pay attention to various principles in its arrangement, which include the principle of benefit. The principle of benefit is that all activities in KTR can provide maximum added value in the context of realizing community welfare (Suryani and Suhartini 2019).

Legislation requires ethical principles in its formation, because good law contains moral values. The ethical principles that can be applied in framing cigarette control policies consist of: 1) Beneficence. Tobacco control policies aim to reduce tobacco-related morbidity and mortality. This goal can be thought of as an attempt to do good. Therefore, the principle of kindness which is an act for the benefit of others can be seen as the main ethical principle in tobacco control policy, 2) Non-maleficence. The principle of no harm to ensure that risks and unintended consequences are minimized when developing programs and policies, 3) Justice. The effects of tobacco consumption are not the same for all

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residents. There is a significant gap in tobacco consumption that needs attention. Smokers who are victims of cigarette nicotine addiction need to be protected from ignorance of the negative impacts of cigarette consumption with policies that protect them, 4) Transparency. Tobacco control policies must be transparent in explaining relationships within the right framework and disclose fair relationships with all collaborative partners, 5) Truthfulness. The principle of truth is very important in tobacco control policy. The truth about the real and scientifically proven dangers of tobacco must be disclosed, and 6) Respect for autonomy. The principle of autonomy in tobacco control policies respects the autonomy of all individuals, both smokers and non-smokers. For smokers, the policy is aimed at regulating places where smoking is allowed. On the other hand, the right of non-smokers not to be exposed to secondhand smoke must also be protected (Juanita 2012)(Susetiyo et al. 2021).

4. Conclusion and Sugestion

KTR which is or is included as a public service facility is also the responsibility of the state to properly administer it as referred to in the Constitution, so that it is necessary to follow up with its regulation in regional regulations to provide certainty, protection, and legal justice to individuals, families and communities.

The purpose of establishing KTR is to reduce the morbidity and/or mortality rate by changing people's behavior to live a healthy life; increase optimal work productivity; realizing healthy and clean air quality, free from cigarette smoke; reduce smoking rates and prevent novice smokers; and create a healthy young generation.

The implications of implementing a No Smoking Area include a) respecting and protecting the human rights of non-smokers; b) provide a positive image for health service facilities, places for teaching and learning, places for children to play, places of worship, public transportation, workplaces and public places, as well as other designated places; and c) limiting the space for smokers to move.

The establishment of the Tanjungpinang City Regional Regulation on KTR needs to be implemented by considering the fulfillment of human rights and constitutional rights in the health sector. The determination of KTR needs special attention, it is intended to prevent huge losses in regional development, especially human

resource development. Basic or general provisions that have been regulated in regional regulations can be further regulated in special provisions or in more detail in mayoral regulations. This can be done with the consideration that regional regulations can be analogous to laws, but the area of application is only at the regional level, so it still requires further regulation in the laws and regulations that are hierarchically under it.

5. Acknowledgements

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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THE EFFECT OF LAVENDER AROMA THERAPY ON REDUCING LABOR PAIN IN THE ACTIVE PHASE OF 1st STAGE OF LABOR AT THE DEPAPRE HEALTH CENTER

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Abstract

Labor is something experienced by every woman who wants to remove the fetus from the womb. One of the things that often accompanies this is pain. Pain in labor can be distinguished by type, duration and intensity. Pain during labor can cause fatigue or weakness which in turn can lead to fetal distress, and even death to the mother. In general, there are two ways to deal with pain in labor, namely by using pharmacological and non-pharmacological methods. One of the pharmacological methods is to provide anti-pain drugs, while one of the non-pharmacological methods for pain reduction is the use of lavender aromatherapy. The aromatherapy comes from lavender (Lavandula angustifolia) flowers. Lavender (Lavandula angustifolia) has a sedative effect because it has the main active ingredient, linalool (C10H18O). The mechanism of lavender flower aromatherapy (Lavandula angustifolia) which contains linalool by stimulating an area in the brain, namely the nucleus raphe which will secrete serotonin which can send a person to sleep.

Keywords: *Aroma Lavender; Rasa Nyeri; Persalinan.* *(Keyword consist of 3-5 words or phrases, separated by ;)*

1. Introduction

Labor is something experienced by every woman who wants to remove the fetus from the womb. One of the things that often accompanies this is pain. Pain in labor can be distinguished by type, duration and intensity (Adrian, 2021).

Pain during labor can cause fatigue or weakness which in turn can lead to fetal distress, and even death to the mother.

The current maternal mortality rate (MMR) is still far from the target of the Sustainable Development Goals (SDGs), which is 70 per 100,000 live births in 2030. According to data from the World Health Organization (WHO), the maternal mortality rate in the world in 2015 was 216 per 100,000 live births or the estimated number of maternal deaths is 303,000 deaths with the highest number in developing countries, which is 302,000 deaths. The maternal mortality rate in developing countries is 20 times higher than the maternal mortality rate in developed countries, namely 239 per 100,000 live births, while in developed countries it is only 12 per 100,000 live births in 2015 (Susiana, 2019).

In general, there are two ways to deal with pain in labor, namely by using pharmacological and non-pharmacological methods. The use of pharmacological methods will reduce labor pain physiologically, but the psychological and emotional conditions of the mother will be neglected (Sunarsih & Sari, 2020), while non-pharmacological methods are effective without adverse side effects and can increase satisfaction during labor because the mother can control feelings and strengths (Darma et al., 2020). One of the pharmacological methods is to provide anti-pain drugs, while one of the non-pharmacological methods for pain reduction is the use of lavender aromatherapy.

The aromatherapy comes from lavender (Lavandula angustifolia) flowers. Lavender (Lavandula angustifolia) has a sedative effect because it has the main active ingredient, linalool (C10H18O). The mechanism of lavender flower aromatherapy (Lavandula angustifolia) which contains linalool by stimulating an area in the brain, namely the raphe nucleus which will secrete serotonin which can send a person to sleep (Ramadhan, 2017). Based on research, in 100 grams of lavender flowers Lavandula angustifolia) is composed of several ingredients, such as essential oils (1-3%), alpha-pinene (0.22%), camphene (0.06%), beta-myrcene (5, 33%), cymene (0.3%), limonene (1.06%), cineol (0.51%), linalool (26.12%), borneol (1.21%), terpinine-4-ol (4.64%), linalyl acetate (26.32%), geranyl acetate (2.14%), and caryophyllene (7.55%), so it can be concluded that the main ingredients of lavender flowers are linalyl acetate and linalool7

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(C10H18O) (Ramadhan, 2017).

Aromatherapy is a treatment technique with the aroma of essential oils from the distillation process of various parts of plants, flowers, and trees, each of which contains different therapeutic properties. 7.8 Lavender essential oil (Lavandula angustifolia) provides a sedative effect because it contains the main active ingredient, linalool (C10H18O) (Ramadhan, 2017).

Several studies have shown the effectiveness of lavender aromatherapy. Wiwin Widayani's research showed that there was a decrease in pain before and after administration of lavender aromatherapy by inhalation (Z=-3.77) with a p-value of 0.001 (& Susanti, 2016). Susilarini et al's research on the effect of giving lavender aromatherapy to the control of labor pain in the first stage of labor in 2017 stated that there was an effect of giving lavender aromatherapy on the control of labor pain in the first stage of labor. There was a decrease in pain scale after being given lavender aromatherapy because the scent produced by lavender aromatherapy would stimulate the thalamus to secrete enkephalins, which function as natural pain relievers (Susilarini et al., 2017).

The results of Sarfina Haslin's research on the Effect of Aromatherapy on Reducing Pain Intensity in Active Phase I Primigravida Labor at the Tanjung Pratama Clinic in 2018 stated that there was an effect of Lavender Aromatherapy on reducing pain intensity in mothers in active phase I labor at the Tanjung Pratama Clinic in 2018 (Haslin, 2018).

Based on the above, researchers are interested in conducting a study entitled "The effect of lavender aroma therapy on reducing labor pain in the active phase of 1st stage of labor at the Depapre Health Center"

2. Method

The type of research used in this study is a quasi-experimental (quasi-experimental) with a one group pretest-posttest design.

The population of this study were 30 pregnant women in the third trimester of February-May. The sample in this study were 30 pregnant women in the third trimester in February-May. The sampling technique is total sampling.

The measuring instrument or instrument used in this research is the numerical rating scale (NRS). This scale has a numerical value and a relationship between different levels of pain. This

pain scale occurs from the 0-10 cm line that has been determined in advance.
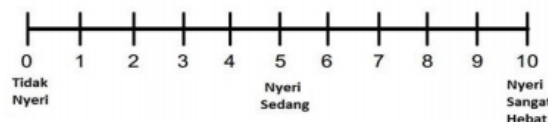
Source: suciati, 2014 : 139
Information :
1) No pain : 0
2) Mild pain: 1-3
3) Moderate pain: 4-6
4) Severe pain: 7-9
5) Very severe pain: 10

In this study the researchers grouped into 2 categories, namely a scale of 4-6 including moderate pain and a scale of 7-10 including severe pain.

The materials used in this study were a diffuser and lavender oil, and jam. Lavender oil comes in a 15 ml bottle. 1 ml is equal to 20 drops. Lavender oil will be evaporated using a diffuser. In this study, 6 drops of aromatherapy oil (0.3 ml) were used with a mixture of 2 tablespoons of water (30 ml). time of giving lavender aromatherapy for 15-20 minutes (Kundarti et al., 2017).

The research implementation begins with preparing/managing research permits from educational institutions based on an introduction addressed to the research institution and reporting it before starting data collection activities in the field.

This research was carried out by collecting primary data obtained directly from patients, observing/observing and interviewing respondents in the field.

Data processing is one of a series of research after data collection. Raw data needs to be processed in such a way that it becomes information to answer research objectives. This data processing was carried out with the help of the SPSS version 16 program.

The coding was done for the first time in making the answers to the questionnaire. After all the questionnaires have been edited, then coding is done, namely changing the data in the form of sentences or letters into numerical data. The answer choices use a code in the form of numbers to facilitate the next stage of data processing. The coding variables were labor pain and lavender aromatherapy.

Enter the answers from each respondent in the form of codes (numbers) into the data processing software.

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After the data is entered, it is checked again the data that has been entered. This re-check is to see the possibility of code errors, incompleteness and so on and then justified or corrected.

Analysis of the data in this study is a univariate analysis to describe the distribution of maternal characteristics presented in the form of tables and narratives. Bivariate analysis in this study used a dependent (paired) T test, which is a type of statistical test that aims to compare the mean values between one group member who are paired with each other whether they are significantly different or not. It is said that there is a significant difference if the P value < 0.05, on the contrary if the P value > 0.05, it is considered that there is no significant difference.

3. Result and Discussion

a. Result

The results of the study will be presented in the form of tables and narratives as follows:

Table 1 Distribution of Respondents by Age

Age (years)	N	Percentage %
18-22	10	33.3
23-27	8	26.7
28-32	8	26.7
>32	4	13.3
Total	30	100

Source: primary data, 2021

Table 1 shows that of the 30 respondents, most of them are in the age category of 18-22 years as many as 10 (33.3%) people.

Table 2 Distribution of respondents by education

Education	N	Percentage %
SD	1	3.3
Junior High School	11	36.7
Senior High School	17	56.7
DIPLOMA/bachelor	1	3.3
Total	30	100

Source : data primer, 2021

Table 2 shows that of the 30 respondents, the majority have high school education as many as 17 (56.7%) people.

Table 3 Distribution of respondents by occupation

Work	N	Percentage %
Working	1	3.3
Doesn't work	29	96,7
Total	30	100

Source: data primer, 2021

Table 3 shows that of the 30 respondents, the majority did not work as many as 29 (96.7%) people.

Table 4 Pain intensity before being given aromatherapy

Painful	N	Percentage %
Currently	13	43,3
Heavy	17	56,7
Total	30	100

Source : data primer, 2021

Table 4 shows that from 30 respondents, there were 13 respondents (43.3%) who felt moderate pain and 17 respondents (56.7%) who felt severe pain before being given aromatherapy.

Table 5 Pain intensity after being given aromatherapy

Painful	N	Percentage %
Currently	17	56,7
Heavy	13	43,3
Total	30	100

Source : data primer, 2021

Table 5 shows that of the 30 respondents, there were 17 (56.7%) people who felt mild pain and 13 (43.3%) people who felt moderate pain after being given aromatherapy.

Table 6 Differences in pain intensity before and after being given aromatherapy

Pain intensity	Mean	SD	P value	N
Pre Test	1,65	0,547	0,000	30
Post Test	3,57	0,504		

Source : data primer, 2021

Table 6 shows the average score of pain intensity before being given aromatherapy was 1.65 with a standard deviation of 3.57 and after being given aromatherapy the average score of pain intensity changed to 0.547 with a standard deviation of 0.504. The results of statistical tests showed p-value = 0.000 <0.05, meaning that Ha was accepted and Ho was rejected, there was a significant difference in pain intensity before and after being given lavender aromatherapy.

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b. Discussion

1) Pain intensity before giving aromatherapy

From the results of the study obtained from 30 respondents, there were 13 respondents (43.3%) who felt moderate pain and 17 respondents (56.7%) who felt severe pain before being given aromatherapy. The labor pain felt by the respondent before being given lavender aromatherapy can prove that the mother inpartu will feel labor pain. This is in accordance with the theory (Kb et al., 2018) Labor pain is a subjective experience caused by uterine muscle ischemia, uterine ligament pulling and traction, ovarian traction, fallopian tubes and lower uterine distension, pelvic floor muscles and perineum. Pain in the first stage of labor occurs because of the great activity in the body to expel the baby. It occurs when the uterine muscles contract to push the baby out. The uterine muscles tighten during contractions. With each contraction, the bladder, rectum, spine, and pubic bone receive intense pressure from the uterus. The weight of the baby's head when it moves down the birth canal also causes pressure (Danuatmadja in (Rahmita et al., 2018).

From the results of the study before being given lavender aromatherapy, it can be seen that 17 respondents (56.7%) felt severe pain with the distribution of the most age categories being 18-22 years old, as many as 10 respondents (33.3%). This is in accordance with the theory (Fitryanti, 2017) Young age tends to be associated with psychological conditions that are still unstable, which triggers anxiety so that the pain felt becomes more intense. This is also in line with Anisyah's research (2013) on the analysis of factors that influence labor pain in active phase 1 labor mothers which states that the age variable has a relationship with labor pain variables as evidenced by the value of X2 count > X2 table, namely 7,773 > 5,991 with a value of 0.021 (p<0.05).

2) Pain intensity after being given aromatherapy

From the results of the study obtained from 30 respondents, there were 17 (56.7%) people who felt mild pain and 13 (43.3%) people who felt moderate pain after being given aromatherapy. From these results it can be concluded that there is a change in pain before and after giving lavender aromatherapy where respondents who before being given lavender aromatherapy felt severe pain turning into moderate pain after being given lavender aromatherapy as well as respondents who felt moderate pain before being given aromatherapy, turning into mild pain after being given aromatherapy. lavender. This is in accordance with the theory According to Tomescu et al. (2015), linalool (43.32%) and -terpineol (12.69%) were the largest components of lavender flower oil. Linalool is the main active ingredient that plays a role in the anti-anxiety (relaxation) effect of lavender. The fragrance produced by lavender flowers stimulates the thalamus to secrete enkephalins, which act as natural pain relievers. According to Sharma in (Azizah et al., 2020), lavender aromatherapy can provide an analgesic effect, so that it can relieve headaches, muscle pain, and is antibacterial, antifungal, anti-inflammatory, antiseptic, and sedative.

This is in line with the research conducted by Pebi and Riona on the effect of lavender aromatherapy on labor pain in 2020 which stated that there was a significant difference between giving lavender aromatherapy to labor pains where the average level of pain in laboring women using lavender aromatherapy was 4.89 score. minimum pain level of 3 and maximum 7 while the average level of pain in childbirth after using aromatherapy is 3.52 pain level score of at least 2 and maximum 6.

This is also in line with Yona and Martina's research on giving lavender aromatherapy to reduce labor pain intensity in 2019 which stated that the average labor pain before being given lavender aromatherapy at PBM Tri Yunida Kotabumi in 201 was 7.03 (severe pain) and an average of 7.03 (severe pain). The average labor pain after being given lavender aromatherapy at PBM Tri Yunida Kotabumi, North Lampung Regency in 2019 was 5.00 (moderate pain).

3) The difference in pain intensity before and after aromethérapy is given

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Changes in pain intensity before the intervention and after the intervention there was an increase in pain intensity after the intervention period with p-value = 0.000. The results of this study are in accordance with the theory which shows that there is an increase in labor pain in the first stage. Because primiparas experience a longer labor, they feel tired. This causes increased pain. The pain that occurs during the first stage is also caused by uterine contractions that continue to increase to achieve complete cervical dilatation. As the volume and frequency of uterine contractions increase, the pain will also increase. The pain will continue to increase as the opening increases from 1 cm to a complete opening of 10 cm (Pada et al., 2019). According to the researcher's assumptions, labor and birth are physiological processes that accompany the life of every woman. Although childbirth is a physiological process, in general childbirth can be scary because it is accompanied by severe pain and sometimes can lead to threatening mental conditions.

Pain affects the delivery process smoothly and comfortably, especially for primigravida mothers, this is the first experience. (Solehati, 2018) said that pain in one delivery compared to pain in the next delivery will be different, due to differences in the mechanism of cervical opening, namely in primiparas the internal uterine os will open first so the cervix will flatten and thin out. From a psychological point of view, primigravida mothers are generally anxious and afraid of childbirth, thus stimulating the body to release stressor hormones, namely catecholamines and adrenaline hormones, as a result, the uterus becomes increasingly tense, the flow of blood and oxygen into the uterine muscles decreases because the arteries shrink and narrow, resulting in pain that is inevitable. . Mothers who have experienced childbirth are able to respond to pain, give birth in a relaxed state, the muscle layers in the uterus will work together harmoniously so that childbirth will run smoothly, easily, and comfortably (Hermina, 2015).

Lavender is a type of aromatherapy. According to Tarsikah in Susilarini (2017), lavender aromatherapy is an analgesic essential oil that contains 8% terpenes and 6% ketones. Monoterpenes are the most common terpene compounds found in plant essential oils. In medical applications monoterpenes are used as sedatives. Lavender oil also contains 30-50% linalyl acetate. Linalyl acetate is an ester compound formed by combining organic acids and alcohols. Esters are very useful for normalizing emotional states and body imbalances, and also have sedative and tonic properties, especially on the nervous system. The scent produced by lavender aromatherapy will stimulate the thalamus to secrete enkephalins, which act as natural pain relievers.

4. Conclusion and Sugestion

Conclusion
1. From 30 respondents, there were 13 respondents (43.3%) who felt moderate pain and 17 respondents (56.7%) who felt severe pain before being given aromatherapy.
2. There are 13 (43.3%) respondents who feel moderate pain and there are 17 (56.7%) respondents who feel severe pain after being given aromatherapy.
3. There is an effect of lavender aromatherapy on the intensity of pain in maternity women p = 0.000 <0.05.

Sugestion
1. Lavender therapy can be an alternative non-pharmacological treatment in reducing labor pain
2. For further research, it can be compared with other non-pharmacological treatments in the management of labor pain.

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Wednesday, June 14, 2022

Publisher : Politeknik Kesehatan Kemenkes Semarang
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THE ROLE OF HEALTH EDUCATION ON THE IMPORTANCE OF BEHAVING HEALTHY AND SAFE ON HIGHWAYS FOR STUDENTS IN TANJUNGPINANG CITY

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Abstract

The traffic accident is one of the public health problems that affect all sectors of human life. The rate of traffic accidents in Tanjungpinang City has increased significantly, where around 90% of traffic violators are dominated by school students. The purpose's study was to determine and measure the role of health education on the importance of behaving healthy and safe on highways to students in Tanjungpinang City based on the level of knowledge, attitude, and behavior of students towards road traffic safety. The method in this study used a quasi-experimental design with a non-equivalent control group by providing pre-test and post-test. The samples were taken purposively as many as 60 students from SMAN X and SMKN Y with the intervention provided in the form of education and socialization. The results showed that there was a significant increase in the average difference on students' knowledge, attitude, and behavior (> 90%). In addition, interventions in the form of education and socialization provided students with a significant improvement in driving safety. Therefore, health education on the importance of healthy and safe behavior on highways to students in Tanjungpinang City had an important role in increasing knowledge, attitude, and behavior towards road traffic safety.

Keywords: *health education, traffic accident, road safety, student*

1. Introduction

Alongside with technological advance and economic development, the transportation and traffic system in Indonesia has been growing rapidly with more complex activities and mobilities. With regard to transportation and traffic management systems, each city has different dimensions of transportation and characteristics of traffic problems (Ramli, 2013). The Capital City area with a dense population and dynamic mobility reflects more complicated and complex transportation and traffic system compared to other rural areas or small cities (Pramitasari, Mahawati, and Hartini, 2014). Demographic condition, increased infrastructure, and economic development of a region are the main factors in the emergence of turmoil in transportation and traffic problems (Pramono, 2016). As in Tanjungpinang City, for example, economic growth and accelerated infrastructure development have attracted migrant workers to work and settle in the city known as the Capital of "Melayu Land" with a fairly rapid economic growth. It has caused a surge in the population, which in turn also increased the volume of vehicles and the fulfillment of transportation and traffic facilities and infrastructure in Tanjungpinang City. Such conditions have caused various problems and complexities related to transportation management and traffic management, including traffic jam and accidents.

The problem of accident cases in Tanjungpinang City has received the main and crucial attention, considering that one of the causes of human death is traffic accidents. When referring to cases of violations that occurred in Tanjungpinang City itself, there was an increase of almost 100 percent of cases of traffic violations during 2016-2017, where it is known that there were 223 cases of violations in 2016, increasing to 424 cases of violations in Tanjungpinang (Ashab, 2017). In addition, the number of fines in 2019 was 1,707 cases with a percentage of 34 percent, 3,280 traffic violation warnings with a percentage of 65 percent, while the number of fines in 2020

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was 1,914 cases with a percentage of 46 percent and 2,235 traffic violation warnings with a percentage of 53 percent. This indicates that there are still many cases of traffic violations throughout 2019 – 2020 (Ilham and Prengki, 2020). The level of traffic accidents in Tanjungpinang City every year tends to fluctuate with the number of traffic accident victims increasing, where the data stated that the number of traffic accidents in Tanjungpinang City were 91 cases with 26 deaths and 114 minor injuries during 2017. Meanwhile, for 2018, the number of traffic accidents were 77 incidents with 15 deaths and 125 minor injuries (Wafa, 2018).

The highest factors for traffic accidents in Tanjungpinang City are mostly caused by human error, such as unsafe driving ethics, not using PPE for driving such as helmets/seat belts, unsuitable use of driving vehicles, and disobeying traffic signs (Anggraini, 2013). The report inspection of Tanjungpinang Traffic Police stated that traffic violators turned out to be dominated by students, where around 90 percent of traffic violators are still in school uniform and have no driver's licenses (Iskandar, 2015). The high number of traffic accidents in Tanjungpinang also occurs due to a lack of knowledge and public awareness in driving and traffic safety. It is undeniable that a vehicle is something being natural and mandatory for the community to carry out activities and mobilities from one place to another, including being consumed or used by students and teenagers. In fact, cases of traffic accidents in Tanjungpinang City often occurred and affected young drivers/riders. World Health Organization (WHO) estimates that by 2020, the biggest causes of human death are heart disease, depression, and traffic accidents. WHO notes that there are one million people who die due to traffic accidents, where 40% of them are aged to 25 years, and 60% aged < 25 years, which ranges in the age of teenagers and adolescents. In general, the majority of traffic victims on the highway are teenagers, namely students of schools (WHO, 2015). This indicates that young people are very vulnerable to accidents on the road than adults, so they need to get serious attention in increasing their awareness and concern in driving ethics and road traffic safety (Adnani, 2011).

One of the efforts that can be made to increase students' awareness and concern for driving ethics and traffic safety is by conducting health education through information transfer and socialization (Nur Cahyadi, 2011) on the importance of behaving healthy and safe on the highways. Health education for school students is expected to mediate information and communication platform to improve knowledge, attitude, and behavior of road traffic safety, to prevent cases of violations and traffic accidents for students on the highways.

2. Method

This study method used a quasi-experimental design with a non-equivalent control group (Notoatmodjo, 2012) with pre-test and post-test on students. The samples of study were taken purposively as many as 30 students from SMAN X and 30 students from SMKN Y, namely students who use vehicles for the purpose of school's round trip. The intervention carried out in this study was in the form of education and socialization of health education to students to determine and measure the level of knowledge, attitude, and behavior of students towards traffic safety on the highways. The instrument used in this study was some questionnaires, which included individual characteristics consisting of gender, age, driving experience, driving license holding, type of used-vehicle, duration of driving a vehicle, driving distance, and driving accident experience, as well as level of knowledge, attitude, and behavior towards road traffic safety.

The data having been collected were then processed through the stages of editing (rechecking), coding, data entry, and cleaning. Data Analysis presented in the form of univariate analysis and calculation of the difference in the average level of knowledge, attitude, and behavior before and after the intervention was given, for further evaluation and relevant recommendations.

3. Result and Discussion

Tanjungpinang City is a developing city with a lot of infrastructural development, including the management system of traffic transportation and infrastructure. The population growth rate in Tanjungpinang City has always increased in the last 3 years. It is also a factor in the problem of primary needs of the population in Tanjungpinang City, such as the construction and development of school, markets, transportation (vehicles), and roads. Data stated the number of vehicles in 2018 were 165,949 vehicles, where the

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list orders contain motorcycles 141,404 units, followed by buses, microbuses and port'harbor vehicles with 15,630 vehicles and pickups, trucks, jeeps, sedans, ambulances and heavy equipment with 2,660, 2,512, 2,048, 1,606, 80, and 9 vehicles (BPS, 2020).

With the economic growth of Tanjungpinang City as measured by the amount of GRDP at constant prices of 3.21 percent, from 13,548,246.8 million rupiah in 2017 to 13,982,665.7 million rupiah in 2018, where the wholesale trade and car repair retail sector and motorcycles are in second place with economic growth reaching 6.49 percent. It is one of the factors in increasing the number of vehicles in Tanjungpinang City (BPS, 2020). Such conditions have caused a variety of problems and complexities related to transportation management and traffic management, including traffic jam or accident.

If it is reviewed by traffic accident data based on perpetrators and victims in age and professional stratification, it can be seen that the highest number of perpetrators and victims of traffic accidents in Tanjungpinang City occurred in the productive age of 16-30 years, which indicates that perpetrators and victims of traffic accidents in Tanjungpinang City are categorized as early adolescence (12-16 years), late adolescence (17-25 years), and early adulthood (26-35 years), with the dominance of accidents on students of school or college (WHO, 2015).

The issue of traffic accident cases in the city of TanjungPinang has become an important problem to overcome, considering that one of the highest deaths in the Riau Islands Province is traffic accidents. One of the efforts to prevent and reduce the number of traffic accidents in Tanjungpinang is education and socialization through health education in schools. The results of research conducted on 60 school students (SMAN X and SMKN Y) in Tanjungpinang City showed that there were students (< 17 yo) who are allowed to do school's round trip by driving car/motorcycles themselves. In addition, most of them have no driving license holding, and have no driving experience to drive on the highways. Therefore, it is expected that traffic accidents on school's students are in accordance with the conditions that occur, namely there are driving cases of violation, such as students are not old enough and have no well-experience in driving, so that it can be some causes of traffic accidents on the highways in Tanjungpinang City, like human

error or incompetence on driving, situation, and condition on the roads or highways. The following data presents the background of respondents based on individual characteristics of students.

Table 1. Respondent's Background

Students' Characteristic		n	Percentage
Gender	Male	40	67
	Female	20	33
Age	< 17 yo	35	58
	≥ 17 yo	25	42
Driving experience	Yes	15	25
	No	45	75
Driving license holding	Yes	10	17
	No	50	83
type of used-vehicle	Car	5	8
	Motorcycle	55	92
Duration of driving	< 2 years	37	62
	≥ 2 years	23	38
Driving distance	< 10 Km/day	32	53
	≥ 10 Km/day	28	47
Driving accident experience	Yes	38	63
	No	22	37

Based on the research data being obtained (Table 2), it can be seen that there were 38 students who experienced traffic accidents on the highways, with number of incidents < 3 times (78%) and ≥ 3 times (22%), where cause of incidents were unsafe act (70%) and unsafe condition (30%). This can be indicated that the lack of experience in driving on students, can be a trigger factor for traffic accidents on the highways. Students allowed to drive are students who already know good driving etiquette and have been trained to be able to drive safely in accordance with applicable rules, so that it can prevent and reduce the level of traffic accident cases that will happen in the future. Students must get strict attention and discipline to follow the schools' rules.

Table 2. The Description of Students' Traffic Accident

Students' Experience of Traffic Accident		n	%
Number of incidents	< 3 times	47	78
	≥ 3 times	13	22
Cause of incidents	Unsafe act	42	70
	Unsafe condition	18	30

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The research data being obtained on the level of knowledge, attitude, and behavior of students towards road traffic safety before being given by intervention showed that for the level of knowledge, most students had good knowledge of 67 % and bad knowledge of 33 %. For the attitude level, some students had a good attitude of 62% and a bad attitude of 38 %. Meanwhile, students had a good behavior level of 60 % and a bad behavior of 40 %.

This indicated that students' knowledge, attitude, and behavior towards road traffic safety are still lacking or all of variables have met the level standard of 70%. Therefore, health education had an important role in increasing students' knowledge, attitude, and behavior towards road traffic safety through education and socialization.

Table 3. The Description of Students' Knowledge, Attitude, and Behavior (Before Intervention)

Students' Understanding of Road Traffic Safety		n	Percentage
Knowledge	good	40	67
	bad	20	33
Attitude	good	37	62
	bad	23	38
Behavior	good	36	60
	bad	24	40

The research resulted having been done by giving intervention through education and socialization about road traffic safety on students showed that there was a significant increase on level of knowledge, attitude, and behavior on students, where the level of students' knowledge reached 100 %, the level of students' attitude reached 97%, and the level of students' behavior reached 92%. This indicated that intervention being given through health education and socialization had a crucial impact on increasing the level of students' knowledge, attitude, and behavior with an increase more than 90%.

This study has proved that health education on students can have an important role to escalate the level factor of knowledge, attitude, and behavior on students, so that they can increase understanding of road traffic safety and good driving etiquette to prevent traffic accident cases or to obey the traffic rules when they do school's round-trip by themselves or others.

Table 4. The Description of Students' Knowledge, Attitude, and Behavior (After Intervention)

Students' Understanding of Road Traffic Safety		n	Percentage
Knowledge	good	60	100
	bad	0	0
Attitude	good	58	97
	bad	2	3
Behavior	good	55	92
	bad	5	8

If the data between pre-test and post-test of the research are compared to each other, it can be shown that the values of deviation standard were lower than the value of mean for each factor (knowledge, attitude, and behavior), so it indicated that the data were humogen. The two following table showed that the result of the data being analyzed by counting mean, deviation std, max value, and min value on the level of students' knowledge, attitude, and behavior.

Table 5. Comparison of Pre-Test and Post-Test (Mean and Deviation Std)

Variable	Pre test		Post test	
	Mean	Deviation std.	Mean	Deviation Std.
Knowledge	67,17	12,77	98,33	4,19
Attitude	67,17	9,41	93,67	10,73
Behavior	66,83	8,73	89	12,85

Table 6. Comparison of Pre-Test and Post-Test (Max and Min Value)

Variable	Pre test		Post test	
	Max	Min	Max	Min
Knowledge	90	30	100	60
Attitude	80	50	100	60
Behavior	80	50	100	60

The comparison of pre-test and post-test on the level of knowledge, attitude, and behavior on students toward road traffic safety can be seen on figure 1, where there was an increase on the level of each variable or factor, so that it indicated that intervention being given through education and socialization had an important impact to escalate the level of variables.

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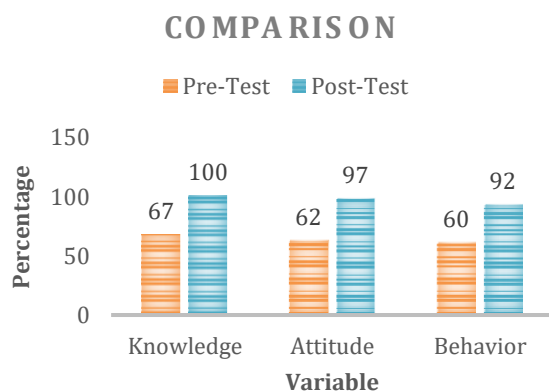Publisher : Politeknik Kesehatan Kemenkes Semarang 2022

Figure 1. *Comparison of Pre-Test and Post-test on Students' Knowledge, Attitude, and Behavior on Road Traffic Safety*

4. Conclusion and Suggestion

In this study, there was a significant increase in the average difference on students' knowledge, attitude, and behavior. In addition, interventions in the form of education and socialization provided students with a significant improvement in driving safety. Therefore, health education on the importance of healthy and safe behavior on the highways to students in Tanjungpinang City had an important role in increasing knowledge, attitude, and behavior towards road traffic safety. The local government of Tanjungpinang City should provide some programs of road safety on children, teenagers, and student in order to prevent or reduce the level of traffic accident cases.

5. Acknowledgements

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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YOUTH PRACTICES IN PREVENTING THE TRANSMISSION OF VIRUSES ATTACKING THE IMMUNE SYSTEM/HIV AT SMA NEGERI 5 DENPASAR

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Abstract

The number of teens have complex problems should get attention from the government and the public about teen's behaviour who tend to be risky about reproductive health especially in the prevention transmission of the Human Immunodeficiency Virus (HIV). The aim of this study was to find out and to obtain information about teen's practice to prevent transmission of HIV virus that attacks the immune system in the case of abstinence, be faithful, condom, don't inject & don't drugs, and education in SMA Negeri 5 Denpasar. These study was an observational descriptive method by using cross sectional approach. The samples were obtained by proportionate stratified random sampling of 90 respondent. Based on the research results on teen's practice on prevent transmission of HIV virus that attacks the immune system that (3.33%) didn't carry out prevention abstinence, (1.11%) didn't carry out prevention be faithful, (66,67%) who have ever had sexual intercourse didn't use condom, (1.11%) didn't carry out prevention in terms of using syringe viewed from indicators don't inject & don't drugs, whereas (38,88%) didn't carry out prevention in terms to consum alcohol, (68,88%) didn't carry out prevention in terms of participate in KSPAN or other organizations viewed from indicators of education. The conclusion of these research that there were teenagers who didn't carry out prevention transmission to the HIV virus that attacks the immune system viewed from indicators of abstinence, be faithful, condom, don't inject & don't drugs, and education. The suggestions for the next researcher as follows to continue and to develop this research.

Keywords: practice; teenagers; HIV.

1. Introduction

Health development is part of national development which aims to increase awareness, willingness, and ability to live healthy for everyone in order to realize the highest degree of public health. Public health disorders in Indonesia are still common in the adolescent group because during adolescence there are physical and psychological changes that cause adolescents to be in a vulnerable condition in the process of growth and development (Anonymous, 2002). Adolescence is a period of transition from childhood to adulthood. The number of teenagers who are quite large with increasingly complex problems has attracted the attention of the government and the public regarding the behavior of adolescents who tend to be at risk, especially regarding reproductive health, especially in preventing transmission of the system that attacks the immune system/HIV (Anonymous, 2008a).

HIV cases that occurred in Indonesia until the end of December 2008 were 6,554 cases with the highest spread through sexual intercourse. As many as 63% of teenagers in Indonesia, both junior high school (SMP) and high school (SMA) have had sexual relations outside of marriage (Anonymous, 2008b). Based on the Case Report of the AIDS Commission (KPA) in Bali Province, the cumulative incidence of HIV case situations in Bali Province was 2,992 people. According to age group and gender, there are 58 people (1.94%) who are vulnerable aged 15-19 years with HIV, with 14 men (24.14%) and 44 women (75). 86%). According to districts in Bali Province, HIV cases in Denpasar City were ranked first with 1,188 people living with HIV (39.7%), male sex 753 people (63.4%) and female sex 435 people (36 people). ,6%), the number of people living with HIV who died was 217 people (7.25%).

According to the Bali Province KPA Activity Report, the Bali provincial government took a policy to regulate HIV control in a regional regulation so as to provide legal certainty and legal protection in HIV prevention in the Bali Province area. Prevention of HIV transmission in adolescents needs to be done as early as possible without waiting for a long period of time, namely 7 to 10 years. The sooner HIV disease is prevented, the fewer adolescents will be exposed to HIV transmission. Prevention of HIV transmission can be done in various ways, such as: abstinence (not having sex, especially premarital sex), be faithful (not having sexual relations with multiple partners), condom (using condoms for teenagers who have had sexual relations) , don't inject & don't drugs (don't share needles for teenagers who have used needles and don't use Narcotics, Alcohol, Psychotropics, Other Addictive

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Substances (Drugs), education (looking for correct information about viruses that attack the immune system) body/HIV, reproductive health, and drugs) (Anonymous, 2008d).

Based on preliminary studies conducted by researchers on ten students at SMA Negeri 5 Denpasar, it was found that 10% of students like to change girlfriends, 10% of students said they had had premarital sex without using a condom, 20% of students students said they were not open in discussing sexual behavior problems with their parents, teachers, friends, or people who understand the problems they were facing, and 60% of the other students had not been open and stated about adolescent practices in preventing the transmission of viruses that attack the immune system/ HIV. SMA Negeri 5 Denpasar has received counseling about HIV from Puskesmas I South Denpasar, KISARA, KPA Denpasar City, and the police.

Referring to existing research and looking at this phenomenon, the researchers are interested in examining the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV in SMA Negeri 5 Denpasar. The formulation of the problem raised is "How is the practice of adolescents in preventing transmission of the virus?" that attacks the immune system/HIV at SMA Negeri 5 Denpasar?" The general purpose of this study was to find out information about adolescent practices in preventing the transmission of viruses that attack the immune system/HIV at SMA Negeri 5 Denpasar, and the specific purpose of this study was to obtain information about adolescent practices in preventing transmission of viruses that attack the immune system/HIV in SMA Negeri 5 Denpasar in terms of abstinence, be faithful, condom, don't injection & don't drugs, and education.

The literature review raised is about practice which consists of the understanding of practice, changes in practice, measurement of practice, and factors that influence practice. The next theory is about adolescents which consists of understanding adolescents, adolescent age limits, and stages of adolescent development. The last theory is about Viruses That Attack the Immune System/HIV which consists of understanding viruses that attack the immune system/HIV, how HIV works by damaging the human immune system, the process of transmitting viruses that attack the immune system/HIV, the process of preventing HIV transmission, and adolescent practices in the prevention of HIV transmission. The research variable used in this study was the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV at SMA N 5 Denpasar.

2. Method

This research is a descriptive observational study with the subject approach used is cross sectional. The study was conducted at SMA N 5 Denpasar. The population of this study was 865 class X and XI students, while the research sample was students of class X and XI at SMA Negeri 5 Denpasar who met the inclusion criteria

and were willing to be respondents. The sample size in this study was 90 people.

The sampling technique used is probability sampling with proportional stratified random sampling, which is a stratified sampling technique by considering the proportion or percentage of samples from each stratum (Arikunto, 2006). The data collected is primary data obtained directly from the respondents by using a questionnaire. The questionnaire which consists of 10 questions has previously been tested for its content validity by experts who are experts in their fields.

The data processing technique was carried out starting from checking the completeness of the contents of the questionnaire, and entering the data into tables and narratives. The scoring for questions about adolescent practices in preventing the transmission of viruses that attack the immune system/HIV uses the Guttman scale with alternative yes and no answers (Riduwan, 2007b). Data analysis used quantitative analysis techniques by calculating the percentage of respondents' practices that did and did not prevent the transmission of viruses that attack the immune system/HIV.

3. Results and Discussion

SMA Negeri 5 Denpasar is a school located at Jalan Sanitation no. 2 Denpasar and is the working area of Puskesmas I South Denpasar. This school has many extracurricular activities, one of which is the Student Care Group for AIDS and Drugs (KSPAN) which is a program of the School Health Business (UKS). The number of students at SMA Negeri 5 Denpasar is 1224 people, consisting of 31 classes, 11 classes for X, 10 classes for XI, and 10 classes for XII.

The characteristics of the research subjects at the SMA Negeri 5 Denpasar are as follows:

Table 1. Frequency Distribution of Respondents' Characteristics Based on Age, Gender, and Child Position, and Based on Parents' Occupation

No	Characteristics of Respondents	n	f	%
1.	Age			
	15-16 years old	90	53	58.89
	17-21 years old		37	41.11
2.	Gender			
	Man	90	44	48.89
	Woman		46	51.11
3.	The Position of Children in the Family			
	Child Status	90		
	Biological children		90	100
	Number of siblings	90		
	0		4	4.44
	1		13	14.44
	2		36	40
	3		27	30
	4		10	11.11
	What order do you come in your family-	90		
	1		52	57.78
	2		20	22.22
	3		12	13.33
	4		6	6.67

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4.	Parents' job			
	a. Father	90		
	civil servant		15	16.67
	TNI/ABRI		3	3.33
	Health workers		2	2.22
	Private employees		32	35.56
	Self-employed		34	37.78
	Doesn't work		4	4.44
	b. Mother	90		
	civil servant		25	27.78
	TNI/ABRI		1	1.11
	Health workers		3	3.33
	Private employees		18	20
	Self-employed		15	16.67
	Doesn't work		28	31.11

Based on the results of observations in table 1 of 90 respondents about the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV in terms of the characteristics of the respondents, namely based on the age of the respondents, the results are close to half of the respondents, namely 53 adolescents (58.89%) obtained from the age of 15. -16 years. Based on gender, the results are close to half of the respondents, namely 46 adolescents (51.11%) obtained from the female gender. Based on the position of the child in the family seen from the status of the child, the results obtained are all respondents, namely 90 teenagers (100%) obtained from the status of biological children, judging from the number of siblings, the results are close to half of the respondents, namely 36 teenagers (40%) obtained from the number of siblings 2 people , and seen from the number of children obtained, the results are close to half of the respondents, namely 52 adolescents (57.78%) obtained from the first child. Based on the work of the parents of the father, the results obtained are less than half of the work of the father, namely 34 people (37.78%) obtained from work as an entrepreneur, while the work of the mother obtained results that are less than half of the work of the mother, namely 28 people (31.11%) mothers respondents do not work.

Results observations of research subjects based on research variables, as follows:
1. Results of Observation of Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in terms of Abstinence Indicators. Based on the results of observations of 90 respondents about the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV in terms of abstinence indicators, the results were that a small proportion of respondents, namely three teenagers (3.33%) did not prevent the transmission of viruses that attack the immune system. /HIV.
2. Results of Observation of Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in terms of the Be Faithful Indicator. Based on observations of three respondents who have had sexual intercourse about adolescent practices in preventing transmission of viruses that attack the immune system/HIV in terms of be faithful indicators, the results are that a small proportion of respondents, namely one teenager (1.11%)

did not prevent transmission of viruses that[65] attack the immune system / HIV.

Based on observations about the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV in terms of abstinence and be faithful indicators, it is found that there are three teenagers who have had sexual relations. The use of condoms in adolescents who have had sexual intercourse can be presented in table 2 as follows:

Table 2. Frequency Distribution of Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in 2012 in terms of Condom Indicators

No	Questions for each indicator	n	Youth Practice			
			Yes		Not	
			f	%	f	%
1.	During sexual intercourse use a condom	3	1	33.33	2	66.67
2.	I use condoms for single use	3	1	33.33	2	66.67

Based on the observations in table 2 of three respondents who have had sexual intercourse about adolescent practices in preventing the transmission of viruses that attack the immune system/HIV in terms of condom indicators, the results are that more than half of the respondents, namely two teenagers (66.67%) do not prevent the transmission of viruses that attack the immune system / HIV.

Table 3. Frequency Distribution of Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in 2012 in terms of the Don't Inject & Don't Drugs Indicator

No	Questions for each indicator	n	Youth Practice			
			Yes		Not	
			f	%	f	%
1.	I've tried to use injectable drugs	90	1	1.11	89	98.88
2.	I used to drink alcohol	90	35	38,88	55	61.11

Based on the observations in table 3 of 90 respondents about the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV in terms of the don't inject & don't drugs indicator, the results are that a small proportion of respondents are one teenager (1.11%) do not prevent the transmission of viruses that attack the immune system/HIV in the case of the use of syringes, and less than half of the respondents, namely 35 adolescents

(38.88%) do not prevent the transmission of viruses that attack the immune system/HIV in terms of consuming alcohol .

Table 4. Frequency Distribution of Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV in SMA Negeri 5 Denpasar in 2012 in terms of Education Indicators

No	Questions for each indicator	n	Youth practice			
			Yes		Not	
			f	%	f	%
1.	I'm always open and talk to my parents or friends about the problems I'm experiencing	90	74	82.22	16	17.78
2.	I am always looking for complete information and true about preventing the transmission of viruses that attack the immune system / HIV.	90	72	80	18	20
3.	I joined as a member of KSPAN or other organizations to gain experience and information about preventing the transmission of viruses that attack the immune system/HIV.	90	28	31.11	62	68,88
4.	I have participated in health education activities such as seminars, workshops, or counseling about preventing the transmission of viruses that attack the immune system/HIV at school or outside of school.	90	80	88,88	10	11.11

Based on the results of observations in table 4 of 90 respondents about adolescent practices in preventing transmission of viruses that attack the immune system/HIV in terms of education indicators, the results obtained are that more than half of the respondents, namely 62 adolescents (68.88%) did not prevent transmission of the virus. attack the immune system/HIV in terms of being a member of KSPAN or other organizations, a small proportion of respondents, namely 18 teenagers (20%) did not prevent the transmission of viruses that attack the immune system/HIV in terms of trying to find complete and correct information about prevention of transmission of viruses that attack the immune system/HIV, a small proportion of respondents are 16 teenagers (17,78%) do not prevent the transmission of viruses that attack the immune system/HIV in terms of openness and tell others about the problems they face, and a small proportion of respondents, namely 10 teenagers (11.11%) do not prevent the transmission of viruses that attack the system. immunity/HIV in terms of participation in activities related to viruses that attack the immune system/HIV.

Based on observations about adolescent practices in preventing transmission of viruses that attack the immune system/HIV at SMA Negeri 5 Denpasar in terms of abstinence, be faithful, condom, don't inject & don't drugs, and education indicators, it can be described as follows:

1. Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in terms of Abstinence Indicators

Based on the results of research conducted at SMA Negeri 5 Denpasar on the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV to 90 respondents in terms of abstinence indicators, it was obtained data that4a small proportion of adolescents (3.33%) do not prevent the transmission of viruses that attack the immune system/HIV. This practice is caused by the curiosity of teenagers to try what it feels like to have sexual intercourse with a partner. Adolescents who continue to have active sexual relations with their partners can cause unwanted pregnancies and sexually transmitted diseases so that the transmission of viruses that attack the immune system / HIV will occur more easily. This practice has a huge impact on the youth themselves, such as early marriage, dropping out of school, and the dark period of adolescence due to the teenager experiencing sexually transmitted diseases or due to teenagers marrying at a young age (Anonymous, 2008c). Adolescents should seek more information about preventing the transmission of viruses that attack the immune system/HIV so that they do not make the wrong steps for the future. In addition, teenagers must also be smart in choosing associations with other people because free association will cause teenagers to fall into bad actions (Sarwono, 2011).

2. Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in terms of the Be Faithful Indicator.

Based on the results of research conducted on three respondents who have had sexual intercourse about the practice of adolescents in preventing the transmission of viruses that attack the immune system/HIV in terms of

be faithful indicators, data is obtained that5a small proportion of adolescents (1.11%) do not prevent the transmission of viruses that attack the immune system/HIV. This practice is caused because teenagers who have had sexual relations with their partners feel bored with their partners so that the teenagers look for other partners to be able to satisfy their sexual desires. This practice should receive special attention from parents and teachers at schools because it can make it easier for teenagers to get sexually transmitted diseases and facilitate the transmission of viruses that attack the immune system/HIV enter the body and multiply in the body. Teenagers should get more counseling or counseling between friends so that they can add insight to teenagers not to have sex by changing partners. In addition, support from parents in motivating their children to do good deeds is very much needed by children to move forward, especially in daily socializing with other people so that they do not fall into promiscuity.

3. Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in terms of the Condom Indicator.

Based on data obtained from three respondents who have had sexual intercourse about the practice of preventing the transmission of viruses that attack the immune system/HIV in terms of condom indicators, the results show that more than half of adolescents (66.67%) do not prevent transmission of the virus. attack the immune system / HIV. This practice is caused because teenagers who have had sexual intercourse feel less comfortable in having sex when using a condom. Condoms are very important to be used by adolescents who have had sexual intercourse because condoms can protect adolescents who have had sexual relations to avoid the risk of a virus that attacks the immune system/HIV (Anonymous, 2008a).

4. Adolescent Practices in Preventing the Transmission of Viruses That Attack the Immune System/HIV at SMA Negeri 5 Denpasar in terms of the Don't Inject Don't Drugs Indicator

The results of research conducted on adolescents on 90 respondents regarding the practice of preventing the transmission of viruses that attack the immune system/HIV in terms of the don't inject & don't drugs indicator, the results show that alcohol5a small number of adolescents (1.11%) did not prevent the transmission of viruses that attack the immune system/HIV in the case of the use of syringes. The use of syringes is due to the curiosity of teenagers about something that for teenagers is a new thing so that it will make it easier for teenagers to lead to things that are alcohol. In addition, the use of syringes is also caused by the association of teenagers and the lack of attention from parents, making it easier for teenagers to fall into bad deeds (Sarwono, 2011). The use of injection needles has a great risk for adolescents exposed to viral infections that attack the immune system/HIV. Drinking alcohol is not a direct cause of a virus that attacks the immune system/HIV but drinking alcohol will refer to bad deeds. Based on the results of a

study of 90 respondents, it was found that less than half of adolescents (38.88%) did not prevent the transmission of viruses that attack the immune system/HIV in terms of consuming alcohol. This practice is caused by the environment of teenagers who are accustomed to drinking alcohol, teenagers' associations, and teenagers' curiosity to feel how good it is to drink alcohol.Teenagers should get more attention from parents so that they are not wrong in choosing association with their peers. In addition, teenagers must also pay more attention to the surrounding environment, association, and seek more information about drugs so that they can avoid bad deeds.

5. Adolescent Practices in Preventing the Transmission of Viruses that Attack the Immune System/HIV at SMA Negeri 5 Denpasar in terms of Education Indicators.

Based on the results of research on adolescent practices in preventing transmission of viruses that attack the immune system/HIV in terms of education indicators, it was found that more than half of adolescents (68.88%) did not prevent the transmission of viruses that attack the immune system/HIV in terms of participation. become a member of KSPAN or other organizations. This practice is due to the lack of information obtained from the youth. In addition, another cause is the lack of interest from teenagers themselves to know more about preventing the transmission of viruses that attack the immune system/HIV so that the practice of teenagers themselves becomes less in prevention. Teenagers must be more creative not only in school but outside of school. Most of the teenagers at SMA Negeri 5 Denpasar have carried out health education activities such as attending seminars, workshops or counseling about preventing the transmission of viruses that attack the immune system/HIV. This practice has a positive influence on adolescents to prevent the transmission of viruses that attack the immune system/HIV. The results of research on adolescent practices in preventing the transmission of viruses that attack the immune system/HIV based on the characteristics of the respondents obtained data that the characteristics of the respondents that are closely related to this study are based on age characteristics. Adolescents who do not take precautions against the transmission of viruses that attack the immune system/HIV are aged 15-16 years. This characteristic is because age affects a person's perception and mindset. As they get older, their grasping power and mindset will also develop, so that the knowledge they gain is getting better (Wawan and Dewi, 2010).

4. Conclusion and Suggestions

The conclusion drawn from the results of the discussion is that a small proportion of adolescents do not practice preventing the transmission of viruses that attack the immune system/HIV in terms of abstinence indicators, a small proportion of adolescents who have had sexual intercourse do not practice prevention of virus transmission that attacks the immune system. /HIV in terms of be faithful indicators, More than half of teenagers who have had sexual intercourse do not

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practice prevention against the transmission of viruses that attack the immune system/HIV in terms of condom indicators,a small proportion of adolescents do not practice preventing the transmission of viruses that attack the immune system/HIV in terms of the use of syringes and less than half of adolescents do not prevent the transmission of viruses that attack the immune system/HIV in terms of consuming alcohol in terms of don't indicators inject & don't drugs, and more than half of the youth do not practice preventing the transmission of viruses that attack the immune system/HIV in terms of being a member of KSPAN or other organizations in terms of education indicators.and more than half of the youth do not practice preventing the transmission of viruses that attack the immune system/HIV in terms of being a member of KSPAN or other organizations in terms of education indicators.and more than half of the youth do not practice preventing the transmission of viruses that attack the immune system/HIV in terms of being a member of KSPAN or other organizations in terms of education indicators.

Suggestions for health workers, especially program holders in the working area of Puskesmas 1 Denpasar Selatan, to continue to carry out the programs that have been carried out at SMA Negeri 5 Denpasar so that they can further improve adolescent practices in terms of reproductive health, especially adolescent practices in preventing the transmission of viruses that attack the immune system/HIV. Suggestions for future researchers are that they are expected to be able to find problems that are closer to adolescents and related to reproductive health and can continue and develop research on adolescent practices in preventing the transmission of viruses that attack the immune system/HIV.

5. Acknowledgements

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EUDEMONIC WELL-BEING OF MULTI DRUG RESISTANCE TUBERCULOSIS (MDR-TB) PATIENTS: A PHENOMENOLOGICAL STUDY

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Abstract

Patients with multidrug-resistant tuberculosis (TB-MDR) have problems both physically and psychologically. The problem of positive psychology is feeling of happiness, increasing the perfection of life better known as eudaimonic well-being. Eudomonic well-being MDR-TB patients can be given after the effects of the drug persist, get support system, and have the motivation to recover. This research will be descriptive about structure of eudomonic well-being patients TB-MDR. This research method is quality with descriptive phenomenon design. The population of this study was MDR TB patients who were undergoing treatment with a total of six participants. Sampling is done by snowball sampling technique. The Data was collected through interviews and analyzed using the Colaizzi technique. The results of the first research objectives as three themes, namely 1) the ability of self-instructor during illness and belief that life is because of God, theme 2) the ability to complete themselves in difficult conditions and suffer during illness, theme 3) have to hope to recover and not discuss the disease. Patients TB-MDR will feel prosperous if they get support from the closest people and can be resolved despite difficult conditions. Therefore, the role of the nurse is very necessary for the development of planning programs and improvement of patient positive psychology to succeed in treatment.

Keywords: Eudomonic well-being, multidrug-resistant tuberculosis

1. Introduction

Patients with tuberculosis (TB) can experience a condition that is resistant to antibiotics, especially Rifampicin and Isoniazid or can be referred to as Multi-Drug Resistance (MDR). TB patients who have experienced MDR cannot be cured with the first standard treatment of TB (Seung et al., 2015a). TB-MDR cases become a global health threat where WHO reported that TB-MDR cases in 2012 recorded 450,000 new cases and caused 170,000 deaths. Meanwhile, in 2014, MDR TB cases are estimated to increase mortality by 190,000 cases. If all cases of MDR-TB were reported, then in 2014 there were an estimated 300,000 experienced in India, China, and Russia, or 54% (WHO, 2015). However, MDR-TB cases were detected in only 41% worldwide or 123,000 cases, and only 26% of the 480,000 were estimated to occur in 2014 (WHO, 2015).

TB-MDR globally can be found in new TB patients ranging from 3.8% and 20% who are patients with a history of non-compliant treatment (Seung et al., 2015B; WHO, 2015). TB-MDR cases become a high burden for the country of Indonesia with an estimated new case of 2.8% with an incidence of 32,000 cases or with a TB rate ratio of 69% (WHO, 2016). According to the WHO report in 2016-2020, Indonesia is in sixth place. Cases of MDR-TB in Indonesia in 2015 were 15,380 cases, 1,860 confirmed cases, and 1,566 treated (Ministry of health, 2016). Research conducted by Reviono said that patients with a history of treatment for Category 2 TB amounted to 103 people (Reviono et al., 2014). As for Papua province cases of TB-MDR in 2015, there were 213 cases, while the success rate of TB treatment reached 44% (Ministry of health, 2016).

Risk factors for increased cases of MDR-TB are closely related to the history of Tuberculosis treatment-experienced. Nagu said that of 54 patients (5.8%) there was resistance from one of the first TB treatment drugs or mono-resistance to isoniazid, rifampicin, streptomycin, and ethambutol (Nagu et al., 2015). The study was

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supported by Babur, et al who said that factors that contribute to MDR TB cases among another medical history, smoking, home ventilation conditions, and the presence of viruses that weaken immunity such as HIV (Dagne et al., 2019). Other factors associated with the increase in cases of MDR-TB are the motivation of patients with an increased risk of cases by 47.5 times, and compliance with taking medication with an increased risk of cases by 10.7 times. (Aristiana & Wartono, 2018).

The consequences felt in MDR-TB patients due to the long treatment time can cause psychological problems. The psychological impact is felt when people with MDR-TB experience death, the grief felt by the caregiver (Morris et al., 2013). In addition, the impact of psychological problems in MDR TB patients is a fairly high feeling of anxiety and depression ranging from 53.3% -to 69.55% (Javaid et al., 2017; Reviono et al., 2014). MDR-TB patients can also experience symptoms of anxiety, and panic disorder, to the risk of suicide (Faizah et al., 2016). MDR TB patients can also lose their jobs because they require long treatment times, thereby affecting economic income in the family, withdrawing from social interactions, and facing stigma from family and friends (Morris et al., 2013; van den Hof et al., 2016).

The condition of psychological disorders of MDR TB patients is closely related to well-being, quality of life, death, and inability to interpret life. MDR TB patients with good quality of life are strongly influenced by the presence of positive psychological or eudaimonic well-being. Eudemonic well-being can be defined as self-realization, which can increase human actualization or meaning of life (Son & Wilson, 2012). Under these circumstances, MDR TB patients will have fairly high hope of recovery. The condition of eudemonic well-being of MDR TB patients is also strongly influenced by family support, counseling, providing information, and involving patients in every activity in the family and community. While the components of good quality of life, such as vitality, psychic health, and health transition (Abrori & Ahmad, 2018).

Decreased Eudaimonic well-being of MDR TB patients can affect the quality of life-related to physical limitations and psychological disorders. Factors that also influence the feeling of well-being or eudaimonic well-being of MDR TB patients are economic problems due to the long duration of treatment, high cost of treatment, and drug side effects. As for

psychological disorders (worry, fear, tension, rejection, depression), social problems (disclosure of problems, rejection, stigma imposed, perceived stigma, discrimination by family members, Society, lack of social support), and economic problems (inability to go to work, absenteeism, loss of addition, challenges they face during treatment and subsequently to lead a normal life(Murugesan & Sathyamurthi, 2020).

The condition of eudaimonic well-being in MDR-TB patients greatly affects the motivation to recover. However, previous research is still very global, namely on subjective wellbeing alone, and has not dug deeper into eudemonic wellbeing. Much research is done more on psychological problems, economic burdens, physical problems, and quality of life (Chen et al., 2016; Dulahu & Ladiku, 2018; Faizah et al., 2016; Rachmawati et al., 2021; Sulistiyani et al., 2021). Research focusing on the eudemonic well-being of MDR TB patients has not been widely disclosed. Given that the condition of eudaimonic well-being is very subjective a person will have their meaning and meaning in looking at a phenomenon that has been experienced. The eudaimonic well-being of MDR TB patients can describe the meaning of life, perception, way of thinking, and emotions of the patient during treatment. Therefore, it is necessary to conduct research with a qualitative approach. The purpose of this study was to explore the structure of eudaimonic well-being in MDR TB patients.

2. Method

Research design is using qualitative research design with a phenomenological approach. Qualitative research phenomenology can know the meaning of life from the subjective and objective aspects of everyday life. Qualitative research is an activity carried out with a focus on placing the researcher in the phenomenon under study (Creswell, 2014; Irma, 2014). The population is a target that will be the object of research to be studied. The population in the study was MDR-TB patients as many as six people until saturated. Samples in qualitative research to get a picture of the phenomenon taken, to generalize a problem. The sampling technique used in this study using snowball sampling, namely sampling began a little, then developed into more by getting information from others. Data collection was conducted by in-depth interview technique with MDR TB

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patients. During the interview process, it uses the probing principle to dig deeply into meaningful words, and to provide a picture of psychological meaning in MDR TB patients. Researchers use a voice recorder that will be used to record all statements and answers from participants with a voice clarity testing distance of 60 centimeter. Researchers also use field Notes to record field findings during the data transfer process (Afiyanti & Rachmawati, 2014)

Qualitative research data processing begins with creating and organizing data such as text data or interview data transcripts. The data obtained is then reduced or grouped based on the keywords obtained to be drawn into themes (Creswell, 2014). Qualitative data analysis uses data analysis that can describe the phenomenology of Colaizzi. Colaizzi's data analysis method is one of the methods that perform the validation by returning the findings of the theme to participants in qualitative research (Polit & Beck, 2012).

3. Result and Discussion

This study was conducted on MDR-TB patients who were still active in treatment. The results of the research that has been done can draw themes that are based on the specific objectives of the study. The results showed three themes 1) the ability to introspect during illness and believe that life is because of God, theme 2) able to adjust to difficult conditions and be grateful during illness consisting of two categories: a) ability to adjust to treatment and b) grateful and more meaningful life, theme 3) have hope to recover and not transmit disease consisting of two categories: a) hope to recover and b) desire not to transmit to family, friends.

1) the ability to introspect yourself during illness and believe that because of God

The ability of self-introspection is felt by patients with MDR-TB as a form of training the ability to assess and reflect on themselves to accept the condition of illness. The condition can be described through the expression of interview excerpts from some participants as follows:

"what I think is that life is happy, it is hard ... when we don't want to accept the feeling that everything has its wisdom..." (P1)

"personally rich as possible to train me. I like patience and faith as well" " (P1)

"I live because of God, yes that's all because of God" (P6)

"I am good with God to continue to believe yes and society is also happy with me" (P4)

However, before reaching a condition where the patient can self-introspection, sometimes the patient will experience bargaining conditions related to the condition experienced. There are also conditions described in the following interview excerpts as follows:

"I had time to blame God to ask God why what is what is given such a condition" (P3)

"I'm afraid my friends are wondering ... I'll never be there I think so now I live in the House In n that stay in the House continue ..." (P2)

"I feel that a life is sometimes like a family burden" (P5)

2) able to adjust to difficult conditions and be grateful during illness

The ability to adapt to difficult conditions and be grateful during illness is perceived as a condition of MDR TB patients when able to adapt to treatment, be grateful, and more meaningful to live for these conditions can be expressed through interview quotes of several participants as follows:

"First came that we did not drink, but now we continue to drink because it is customary to take medicine" (P4)

"If I adjust it...indeed, sometimes, when I've seen the drug is no longer able... " (P6)

"It was a bad taste at first, but now it's normal" (P5)

"It was a bad taste at first, but now it's normal" (P5)

While the conditions that describe the gratitude and more meaningful life can be expressed through interview quotes from several participants as follows:

"It is more meaningful to live if we have time, and if we are still alive we make good use of life" (P1)

"I think, ouch me must improve myself, I must heal, I must be strong...my only hope is that..." (P6)

"I am so grateful that the medicine is right, one of the love they that saved us. So I am grateful and believe medicine is good" " (P6)

"Now it's good...the officer also always stressed that lazy to take medicine can not be cured..." (P4)

However, some MDR-TB patients still feel that the condition of the illness that is experienced makes them unable to work and only become a burden on the family. These

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conditions are expressed through the following interview excerpts:

"My feeling is like I want to work, but it's like being lazy ... Yes, I've felt a burden for my family during illness" (P5)

3) have hope to recover and not transmit the disease

MDR TB patients who are undergoing treatment will have expectations that can be used as motivation to conduct treatment by the prescribed program. The most important hope of MDR TB patients is healing and having a desire not to transmit the disease to others. The description of the condition can be expressed from the interview quote as follows:

"Hopefully yes want to be cured, if gathering phlegm do not late, must be on time..." (P1)

"I am convinced that God works in everyone that God also helps us through officers, through friends and all..." (P1)

"I just wanted to get better." (P3)

"I am cured of illness now nothing" (P4)

"I hope to heal, it me happy" (P2)

"Nothing, only Pingin heal, so always carry it in prayer" (P5)

"My hope, I want to heal. He wants his treatment done quickly" (P6)

In addition, conditions that indicate a desire not to transmit the disease to others can be expressed through the following interview excerpts:

"I want to get well so that my friends and family don't get infected and get sick like me and live healthy and not like me" (P6)

"I have to take medicine to heal, anyway I follow the schedule from them" (P4)

"earlier I felt a burden on the family, could not earn a living, not work...so I have to heal" (P5)

MDR-TB patients can have the confidence to recover if they can do introspection and have confidence that God can give healing. The meaning of the life of MDR TB patients after illness and getting treatment is self-introspection, it is done because MDR TB patients assume that the pain obtained because they have mistakes in past lives. This form of self-introspection in MDR TB patients is when questioning the condition with God and even blaming God, then convincing yourself that life is lived because of God. The form of self-introspection that can be done is to train faith, be able to take wisdom when getting difficulties in life, by not repeating past lives, not consuming gatherings with friends,

drinking, smoking, going home at night, praying, being patient, and still trying to work and diligently control. It increases self-awareness for MDR TB patients to be able to undergo treatment with pleasure. Goleman in Dariyo said that self-awareness is the most important thing because by having self-awareness, then understanding the potential in the self, managing self-ability (Dariyo, 2016). Self-awareness is also the foundation for emotional intelligence (Goleman, 1996, Ott, 2002). for example, MDR TB patients who undergo treatment will be able to perform self-introspection because they have emotional intelligence, one of the components of which is self-awareness (Ott, 2002).

Self-introspection is closely related to spirituality, where the current state can only pray to God Almighty to be given healing. Mulyani mentioned that introspection can maintain spiritual values and strengthen coping when people are given pain. Circumstances where a mistake in the past life will be accepted in the current life (Mulyani, 2014). Taule said that the process of introspection begins after returning home, it is because the activities in life when healthy occur at home but the condition of the elderly will repeat the previous memory (Donkor, 2014).

The results showed that MDR TB patients can still adjust to the condition of illness because they can be grateful and more self-meaningful. The provision of spiritual therapy is an integrated part of the art, science, and recovery process (Yuen, 2008). Marbandz says that the provision of spiritual therapy can help patients with chronic diseases to achieve a better life (Marbandz, 2016). This is very much in line with the results of research where patients who have back spiritual values will be able to survive in difficult conditions and feel that the life lived is much better than the previous one. Marbandz also said that spiritual care can provide a series of activities that support the patient's healing process such as spiritual health promotion, preventing spiritual illness, and medications that include religious care and spiritual care is described as activities that patients are encouraged to pray for, physical care such as meeting the need for a healthy diet, considering needs based on gender, and experience in treating terminal patients (Harbandz, 2016). South also said that by praying the patient will feel well, increase the ability to be more patient, reduce anxiety, and provide a positive healing experience (South, 2018).

MDR-TB patients who have high

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expectations will have a positive influence on treatment compliance, autonomy in decision making, and partner control during treatment by always reminding taking medication, perceiving the body, self-medicating, and treating the side effects of MDR TB treatment (Horter et al., 2016). MDR TB patients who have hope and optimism are a form of psychological health. The results say that people who have hope will be able to survive in groups, able to see opportunities, and have an adaptive response to conditions around them (Bailits, 2012). The results of the study say that patients have high hopes of recovery when receiving support from officers and families. This is in line with research from Sari who said that MDR TB patients have obedient behavior for treatment because of good service (Ainiyah et al., 2019). Lestari also said that MDR TB patients have hope to recover because the side effects of drugs are felt very unpleasant such as physical, social, psychological, and financial disorders for the sufferer, where the sufferer will feel suffering, sad unproductive, and boring life (Sukartini et al., 2019). In addition, MDR-TB patients can have hope of recovery and obey taking medication in the presence of openness of the patient's condition. Thus, the patient does not transmit to others when receiving psychosocial support (G. et al., 2013).

4. Conclusion and Sugestion

The conclusion of the results showed a picture of the theme of eudaimonic well-being in patients with MDR-TB during undergoing treatment. Themes that can describe the condition of satisfaction or happiness in terms of positive and negative as many as three themes, including themes that describe the meaning and structure of eudaimonic well-being. Patients TB-MDR will feel prosperous if they get support from the closest people and can be resolved despite difficult conditions. Therefore, the role of the nurse is very necessary for the development of planning programs and improvement of patient positive psychology to succeed in treatment. The results of the study can be used for guidance to conduct further research that focuses on program development and handling of physical and psychological problems, and psychosocial experienced by MDR-TB patients. Further research can go on the target families who care for MDR TB patients need to be considered in terms of psychological because a wide range of services for MDR TB drains energy and mind using quantitative research. The results showed that MDR TB patients still get rejection and stigma from the family. This can reduce the psychological well-being of MMDR TB

patients. The development of nursing interventions needs to be done to address the problems found in MDR TB patients. Nursing interventions can be in the form of self-efficacy therapy, increased self-awareness, increased spiritual wellbeing through Prayer therapy, mindfulness, positive thinking therapy, and hope therapy that can increase the motivation of MDR TB patients in living the present life.

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RELATIVE EFFICACY OF PROBIOTICS TO LOWER THE FREQUENCY OF BOWEL MOVEMENTS IN CHILDREN UNDER-FIVE YEARS OF AGE WITH ACUTE DIARRHEA: A META-ANALYSIS FROM DEVELOPING COUNTRIES

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Abstract

Standard therapy for acute diarrhea is oral rehydration of fluids and zinc to overcome fluid and electrolyte loss. However, such standard therapy does not reduce the duration and frequency of diarrhea. It is because standard therapy is not useful in increasing the ability of the intestinal barrier to inhibit the entry of pathogenic microorganisms. The ability to inhibit pathogens is the main mechanism of probiotics. This study aims to conduct a meta-analysis of the efficacy of probiotics in reducing bowel movements in children under five with acute diarrhea in developing countries. This research was a systematic review and meta-analysis. Selected publications are limited to research conducted in developing countries and published in 2009–2019. Keywords used in searches include: "efficacy" AND "safety" AND "probiotic" AND "acute" AND "diarrhea OR diarrhoea" AND "children." The steps in conducting a systematic review were followed by the guidelines based on the PRISMA flow diagram. Based on a meta-analysis of three studies in developing countries shows that probiotic administration has succeeded in reducing the frequency of bowel movements in toddlers with acute diarrhea by 0.57 times per day. For the development of probiotics as an adjunct therapy for acute pediatric diarrhea, it is hoped that researchers can conduct research related to more specific probiotic strains so that the benefits of probiotics can be right on target according to the type of diarrhea.

Keywords: *Probiotics; Frequency of Bowel Movements; Acute Diarrhea toddlers; Meta-Analysis*

1. Introduction

Diarrhea is the leading cause of mortality in children under five worldwide. Toddlers in developing countries have an average of three episodes of diarrhea each year. Each episode of diarrhea might cause a deficiency in the nutrients required for the child's growth and development (WHO, 2017).

According to the World Health Organization (WHO), there are three types of diarrhea: acute liquid diarrhea, which can last several hours or days and includes cholera; acute diarrhea with blood, generally known as dysentery; and persistent diarrhea, which can last 14 days or more and includes cholera (Barai *et al.*, 2018). Acute diarrhea kills around 1.5 million children under the age of five each year, and it is the most common kind of diarrhea among toddlers. The standard therapy for acute diarrhea is oral rehydration of fluids and zinc to overcome fluid and electrolyte loss. However, the two standard therapies do not reduce the duration and frequency of diarrhea. It is because standard therapy is not useful in increasing the ability of the intestinal barrier to inhibit the entry of pathogenic microorganisms. The ability to inhibit pathogens is the main mechanism of probiotics.

The use and diversity of probiotic products are growing. Some differences in the situation between developed and developing countries, such as sanitation, exclusive breastfeeding rates, socioeconomic levels, parental education, and climate, are thought to affect the effectiveness of probiotics (Rahmi & Gayatri, 2015). Developing

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countries have a less developed industrial base and a lower human development index (HDI) than other countries. In the World Economic Situation and Prospects 2019, 126 countries are developing countries, including Indonesia. Research by Lolopayung, Mukaddas, and Faustine (2014) conducted in Indonesia with a prospective method on diarrhea patients aged one month to 12 years revealed that the use of zinc and probiotics in pediatric diarrhea patients had a meaningful influence on fecal consistency, frequency of diarrhea, duration of diarrhea, and duration of hospitalization. Research shows that probiotics are one of the alternative options for the treatment of acute diarrhea.

The meta-analysis by Rahmi and Gayatri (2015) concluded that research on the effectiveness of probiotic administration in acute diarrhea is still diverse. However, most show effectiveness in reducing the duration and frequency of diarrhea. The given strain of probiotics may influence the results of such studies.

Therefore, based on the above background, this study aims to conduct a meta-analysis regarding the efficacy of probiotics in reducing bowel movements (defecation) in children under five with acute diarrhea in developing countries.

2. Method

This study was a systematic review and meta-analysis where researchers compiled a study that showed a summary of various medical reports related to the effects of probiotics on the incidence of acute diarrhea in toddlers. A systematic review is a research article that identifies relevant studies, assesses the quality, and summarizes the results using a scientific methodology (Khan *et al.*, 2011).

This systematic review involves a process of meta-analysis, that is, an epidemiological study that statistically combines the results of several independent primary studies that are seen as interchangeable, which discuss the same hypothesis in the same way, so that a quantitative overview is finally obtained (Murti, 2018). This research was conducted by searching and selecting data from the results of clinical trials worldwide. Selected publications were limited to research conducted in developing countries and published from 2009 to 2019.

Article searches were conducted on the following databases: PubMed, British Medical Journal (BMJ), CAB Direct, Oxford Academy, Clinical Key, ScienceDirect, and Scopus.

Keywords used in searches included: "efficacy" AND "safety" AND "probiotic" AND "acute" AND "diarrhea OR diarrhoea" AND "children."

The authors developed inclusion and exclusion criteria to clarify the selection and analysis process further. The inclusion criteria for articles that could be reviewed were:
a. Type of publication: full paper published online in English.
b. Type of study: studies were conducted in humans using single and double-blind RCT studies. Studies were conducted in developing countries.
c. Type of intervention: the intervention provided was a probiotic therapy with a type of strain identified as either single or combination, with comparators standard therapy.
d. Participants: The study subjects were children under five aged (0–5 years old) who had acute diarrhea in developing countries.
e. Research results: published articles include the outcome of the frequency of bowel movements and report the presence or absence of side effects that occur.

Exclusion criteria for articles were:
a. Studies were conducted with a systematic review, meta-analysis, cross-sectional, case-control, quasi-experimental, study protocol, or pilot study.
b. The intervention provided was in the form of fermented foods (e.g., yogurt) that did not list the type of probiotic strain contained therein.

Steps in conducting a systematic review were carried out by following guidelines based on the Prisma flow diagram (Moher et al., 2015). First, data processing consists of identifying articles on several journal sites, followed by a screening process for articles that meet the terms and conditions of the researcher. Next, the critical appraisal was carried out with the CEBM RCT Critical Appraisal Sheet, University of Oxford. Finally, after obtaining several articles that passed the eligibility stage, an analysis was conducted by determining the research results to be further processed in the RevMan 5.3 software.

3. Result and Discussion

Based on the article search results, there were 752 articles identified. After deleting duplicate articles, as many as 69 articles, and the articles filtered to 683 articles. Based on the results of the filtered articles, as many as 665 articles were issued, and 18 articles were

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obtained that were considered qualified for the next full-text review process. The final result of the article review process was that three articles qualified quantitatively to perform a meta-analysis of probiotic efficacy on the frequency of bowel movements in toddlers with acute diarrhea in developing countries. The results of the assessment of the quality of the study based on the critical appraisal tools of randomized controlled trials (RCT) published by CEBM University of Oxford show that the study has strong quality. After a systematic review, the next step was to do a meta-analysis.

The results of the meta-analysis were presented in the form of forest plots. A forest plot is a diagram that shows information from each study studied and estimates the overall results (Akobeng in Murti, 2018).
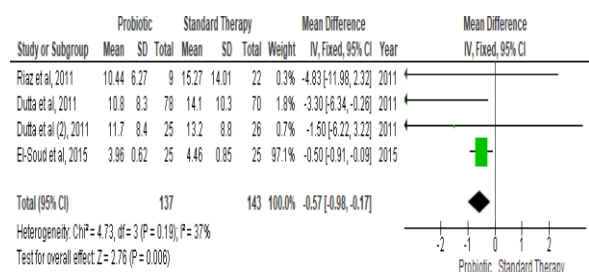

Figure 1. Forest plot analysis of bowel movement frequency in probiotic group vs. standard therapy group

Based on Figure 1 above, it is known that the administration of probiotics can reduce the frequency of bowel movements per day in toddlers with acute diarrhea in developing countries. The overall analysis showed that probiotics statistically reduced the frequency of bowel movements in toddlers with acute diarrhea by 0.57 times per day (MD-0.57; CI 95%-0.98 to-0.17).

The results of this meta-analysis also present a plot funnel. The following funnel plot illustrates the likelihood of publication bias by displaying the relationship between the study's effect size and the sample size related to probiotics' effects in reducing bowel movements in toddlers with acute diarrhea.
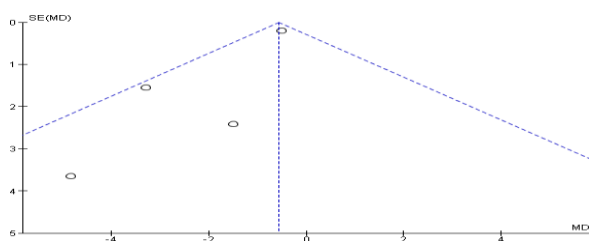
Figure 2. Funnel plot analysis of bowel movement frequency in probiotic group vs. standard therapy group

Based on Figure 2 of the plot funnel above, the plots on the right and left sides are asymmetrical. It indicates that there is a publication bias in the study.

The diarrhea definition is not only based on the feces consistency but is also determined by the frequency of bowel movements that occur in a day. Based on the results of the analysis of three research articles, probiotic administration can reduce the frequency of bowel movements per day in toddlers with acute diarrhea.

All three studies used single-strain probiotics of different types. For example, research conducted by Dutta et al. (2011) using the probiotic *Lactobacillus sporogenes* (Bacillus coagulans) showed the result of a decrease in the frequency of bowel movements in the probiotic group by 23.4% (10.8 ± 8.3 vs. 14.1 ± 10.3). As for patients with rotavirus diarrhea, the results of reducing the frequency of bowel movements in the probiotic group were obtained by 11.4% (11.7 ± 8.4 13.2 ± 8.8). El-Soud et al. (2015) also obtained similar results, namely a reduction in the frequency of bowel movements in the probiotic group *B.lactis* compared to the control group by 3.96 ± 0.62 vs. 4.46 ± 0.85. Similarly, the research conducted by Riaz *et al.* (2011) using the probiotic *S.boulardii* obtained the average result of reducing the frequency of bowel movements in the probiotic group compared to the control group (10.44 ± 6.27 vs. 15.27 ± 14.01). This reduction in the frequency of bowel movements begins to be seen on the second day of probiotic administration.

In addition to the three types of probiotics above many microorganisms have the potential to function as probiotics, of which lactobacillus and Bifidobacterium species are the most commonly used (El-Soud *et al.*, 2015). In addition to Bifidobacterium, non-pathogenic species belonging to the classes of Saccharomyces, Streptococcus, and Lactococcus are also widely used as probiotics.

In line with the above research, a meta-analysis by Allen et al. (2010) suggested that probiotic LGG reduced the frequency of average bowel movements on the second day. Whereas in a systematic review by Szajewska *et al.* (2013), it is known that LGG does not affect the total fecal volume.

The mechanism of fecal discharge is related to the functioning of the intestines. The two main

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functions of the epithelial cells of the small intestine are the secretion and absorption of fluids and electrolytes. The small intestine and colon absorb about 99% of the fluid. Active transport of Na+, Cl−, and HCO3− among others, produces fluid movement across gastrointestinal epithelial cells. Genetic abnormalities, infections, or dysregulation in this active transport often result in diarrhea (Barai et al., 2018). The intestinal microbiota can affect the intestinal motor function either directly or indirectly through mediators released by the intestinal immune response, the final product of bacterial fermentation, or intestinal neuroendocrine factors. Research related to probiotic bacteria proves that probiotics can stimulate intestinal motility in animals and humans. Some probiotics have been shown to reduce bowel movements and improve stools/diarrhea in patients with diarrhea dominated by irritable bowel syndrome. Thus, probiotics functionally normalize intestinal motility to improve the consistency and frequency of bowel movements of people with diarrhea (Choi & Chang, 2015).

4. Conclusion and Sugestion

Based on a meta-analysis of three studies in developing countries shows that probiotic administration successfully decreases the frequency of bowel movements in toddlers with acute diarrhea. Based on the results of per-protocol analysis (PPA) from three studies, it is known that probiotic administration can reduce the frequency of bowel movements in toddlers with acute diarrhea by 0.57 times per day. For the development of probiotics as an adjunct therapy for acute pediatric diarrhea, it is hoped that researchers can conduct research related to more specific probiotic strains so that the benefits of probiotics can be right on target according to the type of diarrhea. Subsequent meta-analysis research compares the use of specific strains of probiotics against diarrhea with certain causes such as viruses, bacteria, and protozoa. In addition, research with therapies other than probiotics (such as anti-protozoan drugs, antibiotics, and traditional medicines) is to be carried out to add alternative treatments for acute diarrhea in toddlers.

5. Acknowledgments

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THE EFFECT OF BABY MASSAGE ON WEIGHT GAIN BABIES AGED 0-2 YEARS IN IFALE VILLAGE SENTANI JAYAPURA REGENCY

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Abstract

One of the most important indicators in assessing the fulfillment of nutrition in babies is to take into account body weight. Weight is the most important anthropometric measure used on every occasion in checking the health of babies in all age groups. This study aims to determine the effect of baby massage on increasing the weight of babies aged 0-2 years in Kampung Ifale Sentani, Jayapura Regency. This study used a pre-experimental design with a One-Group Pretest-Postest Design approach. The study was conducted for 2 weeks with a total of 16 samples obtained by purposive sampling. Statistical test using Paired t-Test. The results of the statistical test obtained the mean value of the baby's body weight before the massage was 8162.5 and the mean value of the baby's body weight after the massage was 8350.0 with a p value = 0.000. This shows that there is an effect of baby massage on increasing the weight of babies aged 0-2 years in ifale sentani village, Jayapura regency.
Keywords: *baby massage ; baby weight*

1. Introduction

The problem of weight in infants is very sensitive, as evidenced from world health organization (WHO) data based on the regional division of countries in 2018, as many as 12% of toddlers in the world experienced impaired weight growth with detailed data showing that Southeast Asia has the highest prevalence of 14.1%, followed by the Arab Emirates 13.9% and ranked third occupied by West Asia pacific with a prevalence of 10.5% (WHO, 2018). According to the 2018 Demographic Survey, the incidence of infant and toddler weight below the red line in Indonesia shows 10-12 million (50-69.7%) of toddlers in Indonesia (4 million) of whom are under one year old, have very poor nutritional status and result in death. Efforts that can be made in optimizing body weight in babies in addition to the nutrients provided by the mother and one way by stimulating through baby massage (Riskesdas, 2018).

During the period from January to June 2019, there were 508 cases of malnutrition and 2,221 cases of malnutrition in Papua Province. The number of cases has the potential to increase because not all districts have reported the nutritional status of children to the province (Costa, 2019).

Baby massage done by parents can improve the emotional connection between parents and babies, it can also increase the baby's weight. In addition, baby massage can stimulate nervus vagus, where this nerve improves intestinal performance so that gastric emptying increases thereby it will stimulate the baby's appetite, on the other hand massage also improves blood circulation and increases cell metabolism, from this series the baby's body weight will increase (Rosalina, 2017).

Research conducted by Yuliana, Suharto & Handayani (2013), to infants aged 3-5 months, obtained an increase in the body weight of babies who were massaged for 4 weeks which was carried out routinely higher than the weight of babies who were not massaged. This is supported by the research of Marni (2019) which concluded that there are differences in growth (weight) before and after being given a baby massage, and according to Kalsum (2014), massage is very effective for increasing weight, increasing growth and can foster the affection of parents and children.

Based on a preliminary study conducted in Ifale Sentani Village, Jayapura Regency, obtained from Posyandu data, there were 130 babies (aged 1 month to 1 year) of which there were 15 babies with growth delays. From the results of interviews with midwives at the Sentani Health Center, there is no service for infant massage as a form of intervention in overcoming baby health problems.

Based on this problem, researchers are interested in knowing "The Effect of Baby Massage on Increasing Body Weight of Babies Aged 0-2 Years in Ifale Sentani Village, Jayapura Regency."

2. Method

This study used a pre-experimental design with a One-Group Pretest-Postest Design approach. The study was conducted for 2 weeks. The population in this study was all babies who visited the Ifale Sentani Posyandu, Jayapura Regency from January to March 2021, as many as 130 babies. The number of samples was 16 babies obtained by purposive sampling with the criteria for babies aged 0-2 years registered in the baby registration book at the Posyandu Kampung Ifale Sentani, babies who were given breast milk only without complementary foods, Birth weight 2500-3900 grams, babies have never been massaged, babies who get immunizations according to their age, parents of babies are willing to participate. The exclusion criteria in this study were babies who had massage contraindications, babies with congenital abnormalities, babies who were in a state of illness, babies with mothers who had a history of taking corticosteroid drugs and stimulating the nervous

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system. The research was conducted by means of Pre Test (initial weighing before doing massage) and Post Test (final weighing after massage). Massage is carried out for 2 weeks every time the baby finishes bathing in the morning and evening. baby massage is done for approximately 15 minutes for 2 weeks every day 2 times by the mother after getting training on how to massage the baby by researchers.

The instrument that will be used in this study is a hanging baby scale with a standardized dacin trademark and has been used to weigh the baby's body weight repeatedly which was previously listed (scale 0) to get the same results. In addition, researchers will also use observation sheets to monitor massages carried out by the baby's parents.

Statistical test using Paired t-Test because after testing the normality of the data using saphiro wilk obtained normally distributed data because the p value for the weight before was 0.89 and the p value for the body weight after was 0.34 so that both >0.05.

3. Result and Discussion

The result of this research seen in the following table 1.

Table 1. Differences in the effect before and after baby massage on the increase in baby weight

Variable	Pre test		Post test	
	Mean	Deviation std.	Mean	Deviation Std.
BabyWeight	8162,5	1725,8	8350,0	1735,5
P Value 0,000				

Based on table 1 from the results of the analysis, the mean value of the baby's body weight before the massage was 8162,5 and experienced an increase in body weight after the massage with a mean value of 8350,0. The test results using the paired T-test with p value 0.000 < ∝ (0.05), then Ho was rejected and Ha was accepted which can be interpreted to mean that there is an effect of baby massage on increasing the baby's body weight.

Information obtained from mothers whose babies were given massage interventions said that their children were often hungry and eventually the frequency of breastfeeding was more frequent than before the massage. This is in accordance with the theory that states that babies who do frequent massages will increase the tone of the vagus nerve, which increases the production of food absorption hormones and an increase in the levels of gastrin and insulin enzymes, so that the absorption of food will be better and maximum. That is why babies who are massaged regularly will increase their weight faster than those who are not massaged (Sulung & Gayatri, 2015).

The results of this study are in accordance with the results of other studies that showed that there was a weight gain of babies in the intervention group of 793 grams and in the control group of 400 grams. There were differences in pretest and posttest results in each

intervention group (p=0.000) and control (p-0.000) and there was an effect of massage on infant weight (p=0.000 (Carolin, et al, 2020). Other Studies in line showed that the weight gain mean for baby massage group (0.89 kg) was higher than baby spa group (0.64 kg) and it had a significant differences with p value = 0.000 (Utami et al, 2020).

Other studies in line showed that the average body weight of babies was 8126 grams before the massage and after massage the baby averaged 8430 grams of weight. The results of the dependent t-test statistical test produced a significant p value between the effect of baby massage and weight changes of 0.0000 (Irva, et al, 2014).

Other Research show that the mean value of the pretest in the experimental group was 6729.2 grams while the mean posttest was 6912.5 grams, because the mean value of the pretest was smaller than the posttest value, it can be concluded that there was an increase in body weight in babies in the experimental group at BPM Midwife E Kurnia, Garut Regency in 2020 of 183.3 grams with a p value of 0.000 (<0.05) so that there is an effect of baby massage on the baby's weight gain. In addition, this study also tested the effect of baby massage on baby sleep patterns with results that mean pretest value in the experimental group was 12.5 hours while mean posttest was 14.6 hours, because mean pretest value was smaller than the posttest value, it can be concluded that there was an increase in sleep patterns in babies in the experimental group at BPM Midwife E Kurnia, Garut Regency in 2020 by 2.1 hours. The p value obtained is 0.000 (<0.05) which means that there is an effect of baby massage on the increase in the baby's sleep pattern (Dinengsih, S., & Yustiana, R, 2021).

Massage activities will increase the activity of the serotin neorotransmitter, which increases the capacity of receptor cells that function to increase glucocorticoids (adrenaline, a stress hormone). This process will cause a decrease in the level of the hormone adrenaline (stress hormone) a decrease in the level of this stress hormone will increase the body's resistance, especially IgM and IgG. Baby massage will make the baby sleep more deeply and increase alertness or concentration. This is because a good massage can change brain waves. This alteration occurs by lowering alpha waves and increasing beta and tetha waves which can be proven by the use of EEG (electro encephalogram) (Syaukani, 2015).

4. Conclusion and Sugestion

The results of the statistical test obtained the mean value of the baby's body weight before the massage was 8162.5 and the mean value of the baby's body weight after the massage was 8350.0 with a p value = 0.000. This shows that there is an

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effect of baby massage on increasing the weight of babies aged 0-2 years in ifale sentani village, Jayapura regency.

The results of this study are expected to be used as a source of data or information for the development of subsequent studies, especially those related to the effect of infant massage on increasing infant weight with a larger number of samples and using randomized controlled trials.

5.   Acknowledgements

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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THE PREVALENCE OF PULMONARY TUBERCULOSIS INFECTION IN DIABETES MELLITUS PATIENTS AT CILACAP HOSPITAL

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Abstract

Diabetes mellitus (DM) is a metabolic disease that occurs due to damage to pancreatic β cells resulting in insufficient insulin production and has an impact on the body's metabolic disorders resulting in hyperglycemia. The immune system of DM patients will decrease and DM patients are prone to infection. One of the most common infections is pulmonary tuberculosis (TB). Pulmonary TB is an infection caused by Mycobacterium tuberculosis. The prevalence of pulmonary TB increases in diabetics up to 20 times. The purpose of this study is to find out the incidence of pulmonary TB infection in DM patients at Cilacap Hospital in 2021 based on gender, age group, DM type, and classification of pulmonary TB. This study is a descriptive observational study with a cross sectional survey approach. The results of the study, 160 (6.70%) DM patients at the Cilacap Hospital in 2021 experienced pulmonary TB infection. DM patients infected with pulmonary TB were 51.87% of women and 48.13% of men. In the elderly age group 79.37% and adolescents - adults 20.63%. Pulmonary TB infection in patients with type 1 DM 0.63% and type 2 DM 99.37%. Infected with non-MDR pulmonary TB 85.63% and MDR TB 14.37%. So it can be conclude that DM patients infected with pulmonary TB at the Cilacap Hospital in 2021 amounted to 160 patients (6,70%), with 137 patients (85,63%) infected with non-MDR pulmonary TB and 23 patients (14,37%) infected with MDR TB.

Keywords: *DM, Pulmonary TB, Infection*

1. Introduction

Diabetes mellitus (DM) is a chronic disease that occurs due to the pancreas not being able to produce enough insulin or the body not being able to use insulin effectively. A common feature of uncontrolled DM is high blood sugar. This can result in damage to the heart, blood vessels, eyes, kidneys, and also nerves (WHO, 2016). Indonesia is included in the 10 countries with the highest number of DM sufferers, which is ranked 7th with 10.7 million sufferers. Indonesia is the only country in Southeast Asia on the list, so it is estimated that Indonesia contributes greatly to the prevalence of diabetes cases in Southeast Asia (Infodatin, 2020).

Diabetes mellitus is a chronic disease related to impaired immune function of the body, so people with DM are prone to infection. One of the infections that easily attacks people with DM is pulmonary tuberculosis infection (Wulandari & Sugiri, 2013). Pulmonary tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis*. This disease attacks the lungs and is not a hereditary disease or curse. Tuberculosis can be cured with regular treatment (Kemenkes, 2017). The prevalence of pulmonary TB in Indonesia (8.4%) is ranked 3rd in the world after India and China in 2020 (WHO, 2021). The highest number of pulmonary TB cases in

Indonesia in 2020 was reported to occur in provinces with a large population, namely West Java, East Java, and Central Java. Pulmonary TB cases in the three provinces almost account for half of the total number of TB cases in Indonesia (46%) (Kemenkes RI, 2021).

The prevalence of pulmonary TB increased in diabetics by up to 20 times compared to the prevalence of pulmonary TB in non-diabetics. In developed countries, an increase in the prevalence of diabetes is accompanied by an increase in TB (Khalil, 2011). Dina (2016) said that the prevalence of diabetic patients experiencing TB in Indonesia is 12.8% - 42%. An increased risk of pulmonary TB infection and sputum conversion failure occurs due to a decreased condition of immunity in DM patients. Studies in several countries reported the relative risk of active TB infection in DM patients increased by 2.44 – 8.33 times (Baghaei, Marjani, Javanmard, Tabarsari, & Masjedi, 2013).

RSUD Cilacap is a government hospital with fairly complete examination facilities. Cilacap Regional Hospital has a pulmonary center facility and as a pulmonary TB referral hospital. The pulmonary TB examination carried out at Cilacap Regional Hospital is a microscopic Acid Resistant Bacteria (BTA) examination and a Molecular Rapid Test

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(TCM). Cases of pulmonary TB in DM patients at Cilacap Regional Hospital are always present every year. Based on the description of the problem above, the author is interested in conducting research on the incidence of pulmonary TB infection in DM patients at Cilacap Regional Hospital.

2. Method

This type of research uses descriptive observational with *a cross-sectional survey* research design. The population in this study was all DM patients at Cilacap Regional Hospital for the 2021 period which amounted to 2,400 patients. The samples in this study were DM patients who were diagnosed with pulmonary TB infection. Based on the results of research at Cilacap Regional Hospital, the number of DM patients infected with pulmonary TB in 2021 was 160 patients.

The data taken is secondary data, namely medical record data obtained from the medical record section of Cilacap Regional Hospital. The data taken include gender, age, data on the results of pulmonary TB examination in DM patients, dm type, and pulmonary TB classification. The data that has been collected from the medical record data of DM positive pulmonary TB patients at Cilacap Regional Hospital is then recapitulated, processed, tabulated, and presented descriptively in the form of a table to describe the state of pulmonary TB in DM patients.

Data analysis was carried out based on univariate analysis, which includes gender, age group, DM type, and pulmonary TB classification which is presented in percentage form. Data analysis was also carried out based on bivariate analysis, namely cross-tabulation of the results of the examination of pulmonary TB infection in DM patients based on gender, cross-tabulation of the results of pulmonary TB infection examination in DM patients based on age groups, cross-tabulation of the results of pulmonary TB infection examination in DM patients based on DM type, and cross-tabulation of the results of pulmonary TB infection examination in DM patients based on pulmonary TB classification. This analysis was used to describe the incidence of pulmonary TB in DM patients.

3. Result and Discussion

The results of the study at Cilacap Regional Hospital based on medical record data collection on DM patients infected with pulmonary TB in 2021 are presented in the following table :

Table 1. Frequency Distribution of Pulmonary TB Infection in DM Patients at Cilacap Hospital in 2021

Incidence of Pulmonary TB Infection in DM Patients	Frequency (n)	Percentage (%)
Positive	160	6,70%
Negative	2.240	93,30%
Total	2.400	100%

The data obtained shows that there were 2,400 DM patients at Cilacap Regional Hospital in 2021, with 160 (6.70%) DM patients infected with pulmonary TB and 2,240 (93.30%) patients not infected with pulmonary TB. When compared to the previous study by Zahrotun Nadliroh, et al. (2015) with the results of the prevalence of TB-positive DM patients at Dr. Kariadi Hospital Semarang of 9.1%, the incidence of pulmonary TB infection in DM patients at Cilacap Hospital in 2021 gave lower results. However, when compared to the research of Mahteme Haile Workneh, et al. (2017) with the overall results of the prevalence of pulmonary TB in DM in the Asian Region on average of 3.5%, the incidence of pulmonary TB infection in DM patients at Cilacap Regional Hospital in 2021 is quite high. Thus, it can be concluded that the incidence of pulmonary TB infection in DM patients at Cilacap Regional Hospital in 2021 is high in the Asian Region.

Pulmonary TB infection is increasing in DM patients. This is because immunity in DM patients has decreased. Decreased immunity in DM patients due to hyperglycemia in DM patients. It is suspected that the mechanism underlying the incidence of pulmonary tuberculosis infection in DM patients is through impaired cellular immunity. Hyperglycemia conditions in DM patients can interfere with the functioning of neutrophils and monocytes, thereby causing a decrease in the killing power of bacteria (Mihardja, Lolong, & Ghani, 2016).

People with DM will experience abnormalities in T cells or T lymphocytes. Abnormalities in T cells result in autoimmune occurrence in DM patients. Autoimmune will cause damage to pancreatic cells in DM patients, so insulin production will be disrupted. Disruption of insulin production results in metabolic disorders in the body. This will result in the occurrence of hyperglycemia. Hyperglycemia that occurs results in a decreased immune system in DM patients, so DM patients are easily infected with pulmonary TB.

The cause of pulmonary TB infection in DM patients is due to defects in the function of immune cells and body defense mechanisms, including impaired function of the respiratory epithelium as well as ciliary motility. In DM patients there was an increase in IFN- γ and TNF- α in DM patients. This indicates a disturbance in the cellular immune response. Macrophages and monocytes have impaired chemotaxis and phagocytosis. This results in *the*

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bacterium Mycobacterium tuberculosis can infect DM patients.

Pulmonary TB examination is carried out on DM patients at Cilacap Hospital using the Molecular Rapid Test (TCM) examination and BTA examination. TCM examination is a test that detects *nested real-time PCR-based* molecular for TB diagnosis. The TCM examination provides results quickly and accurately, but cannot be used as a follow-up examination (monitoring) in patients who are undergoing treatment. Thus, for further examination, it is carried out with a microscopic BTA examination.

Table 2. Frequency Distribution of DM Patients with Pulmonary TB Infection By Gender at Cilacap Hospital in 2021

Gender	Frequency (n)	Percentage (%)
Male	77	48,13%
Female	83	51,87%
Total	160	100%

Based on Table 2, it is known that the incidence of pulmonary TB infection in male DM patients occurred in 77 (48.13%) patients and 83 (51.87%) women patients. The highest percentage occurs in females. When compared to previous studies, the results of my research at Cilacap Regional Hospital gave different results, where in previous studies most of them would provide the results of DM patients with the most pulmonary TB infections occurring in men. The difference in the results obtained may be related to DM patients who are female at Cilacap Regional Hospital quite a lot. In addition, the majority of women in Cilacap City generally have visited health care facilities for treatment without being affected by the negative stigma about pulmonary TB. So that many female DM patients who have been diagnosed have pulmonary TB infection.

The difference in the number of DM patients infected with pulmonary TB between men and women is not much different. This proves that pulmonary TB infection also occurs a lot in male DM patients. The large number of male DM patients infected with pulmonary TB is caused because men tend to like to smoke, which results in a decreased respiratory tract defense mechanism so thata respiratory tract is easily infected. In addition, the male group is also associated with other bad behaviors such as, alcohol consumption, drugs, love to travel, spend more time in places that have a greater probability of transmission, have more activity, and engage in work that can increase the risk of pulmonary tuberculosis infective incidence (Yosephine, dkk., 2021). The percentage value of DM patients with pulmonary TB infection in male and female patients had almost the same results. This suggests that gender does not have

a major influence on the incidence of pulmonary TB infection in DM patients.

Table 3. Frequency Distribution of DM Patients with Pulmonary TB Infection Based on Age Group at Cilacap Hospital in 2021

Age Group	Frequency (n)	Percentage (%)
Late Teens (17 – 25 tahun)	1	0,63%
Early Adulthood (26 – 35 tahun)	4	2,50%
Late Adult (36 – 45 tahun)	28	17,50%
Early Seniors adult (46 – 55 tahun)	61	38,12%
Late Seniors adult (56 – 65 tahun)	41	25,62%
Seniors (Old) (> 65 tahun)	25	15,63%
Total	160	100%

Based on Table 3, it is known that the incidence of pulmonary TB infection in DM patients with age categories based on WHO (2016), the adolescent – adult age group was 20.63% and in the elderly age group was 79.37%. The highest percentage occurs in the elderly age group. This is in line with the research of Achanta, *et al.* (2013) which showed that people with DM who were 40 years old were at higher risk of developing pulmonary tuberculosis compared to those aged 40 years. It is associated with a decrease in physical and mental capacity. The decline in the immune system is in line with age, so the elderly age group (non-productive age) is more susceptible to developing infectious diseases.><

In the elderly, the body's defense system will decrease. In the elderly, the function of pancreatic beta cells is more disturbed, besides that in the elderly, they also generally have suffered from DM for a long time and DM control usually becomes unstable. Thus, many of the body's defense systems are not working optimally and DM patients with the elderly age group are more easily infected with pulmonary TB.

Table 4. Frequency Distribution of DM Patients with Pulmonary TB Infection Based on DM Type at Cilacap Hospital in 2021

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DM type	Frequency (n)	Percentage (%)
DM Type 1	1	0,63%
DM Type 2	159	99,37%
Total	160	100%

Based on Table 4, results were obtained in type 1 DM patients infected with pulmonary TB as many as 1 (0.63%) patients and in type 2 DM patients infected with pulmonary TB as many as 159 (99.37%) patients. The highest percentage occurs in type 2 DM patients. This is because type 2 DM patients occur a lot in patients with the elderly age group, where in the elderly a person's immunity decreases so that type 2 DM further increases the risk of pulmonary TB infection in DM patients. This is in line with Janis's (2008) research at the North Sumatra Lung Disease Treatment Center (BP4) and the Health Service Unit (UPK) of Medan Brayan District which states that the age of type 2 DM sufferers with the most pulmonary TB is above the age of 45 years. According to Wijaya (2015) Patients with type 2 DM have a 2 to 3 times higher risk of contracting pulmonary TB disease than patients without DM and are mostly found at the age of more than 40 years, because DM affects chemotaxis, phagocytosis, and antigens presenting by phagocytes.

People with type 2 DM are generally more susceptible to infection, especially in someone with poor glycemic control. This can be caused by a decrease in immune function in people with type 2 DM. In patients with type 2 DM, there are generally disturbances in natural immunity and adaptive immunity. Some of these disorders include a decrease in the secretion of the cytokines *interleukin-1* (IL-1) and *interleukin-6* (IL-6) by neutrophil and monocyte cells, decreased mobilization, chemotaxis, and phagocytosis by phagocytic cells, decreased T cell response, and humoral immunity disorders (Ristanti, et al., 2019).

Type 2 diabetes mellitus occurs due to insulin resistance and impaired insulin secretion. The causes of insulin resistance and impaired insulin secretion in dm type 2 are inflammation and monocyte activity. DM is related to the occurrence of inflammatory processes. The inflammatory response is related to changes in plasma proteins and pro-inflammatory cytokines. DM is related to pro-inflammatory cytokines. Cytokines – pro-inflammatory cytokines of a destructive nature can affect insulin sensitivity and the function of cells β the pancreas. Insulin cannot function effectively, which then triggers the occurrence of increased insulin secretion to maintain glucose tolerance. However, over time the cells β the pancreas are exhausted from producing a lot of insulin so that there is a cell failure β the pancreas. This results in glucose tolerance cannot be maintained and results in a decrease in immunity in the body of people with type 2 DM, so that people with type 2 DM are easily attacked by pulmonary TB infection.

Type 2 DM is also commonly found in people who are obese. Obesity results in a person's immunity decreasing. Obesity causes a buildup of fat cells in the body. Fat cells that accumulate increase inflammation. Inflammation results in insulin retention. Insulin cannot function effectively and eventually results in impaired glucose metabolism in the body and results in increased blood glucose levels. This results in hyperglycemia which then affects the immune system of type 2 DM patients with obesity. The immune system decreases, so infectious diseases will easily enter the body of dm type 2 patients with obesity. In addition, the high incidence of pulmonary TB infection in type 2 DM patients can also be associated with poor HbA1c levels in type 2 DM patients. Based on research by Yosephine, et al. (2021) there is a meaningful relationship between HbA1c levels and the incidence of pulmonary TB infection. Dm patients who have poor HbA1c levels will increase the risk of pulmonary TB infection. Many type 2 DM patients experience poor HbA1c levels (7%), so HbA1c levels in type 2 DM patients are closely related to the incidence of pulmonary TB infection in DM patients.≥

Table 5. Frequency Distribution of DM Patients with Pulmonary TB Infection Based on Pulmonary TB Classification at Cilacap Hospital in 2021

Pulmonary TB Classification	Frequency (n)	Percentage (n)
TB released (non-MDR)	137	85,63%
TB MDR	23	14,37%
Total	160	100%

Based on Table 5, it was found that as many as 137 (85.63%) DM patients had pulmonary TB (non-MDR) and 23 (14.37%) DM patients had MDR TB. Pulmonary TB (non-MDR) infections are more prevalent in DM patients compared to MDR TB. This happens because in general, DM patients only experience non-MDR pulmonary TB infections. DM patients with decreased immunity result in DM patients being more at risk of being infected with *Mycobacterium tuberculosis* bacteria. MTB bacteria that are very small in size will cause bacteria in the inhaled nuclei droplets to enter the lungs, then can easily reach the alveolus. Then, the immune response of this bacterial invasion will cause macrophages to carry out a phagocytic mechanism to destroy incoming germs. However, in a state of low immunity results in macrophages not being able to work optimally so that germs will replicate in macrophages. Germs will continue to replicate within the

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macrophages until they form a colony at that location. Bacteria will develop exponentially and spread more widely.

As for DM patients who have MDR TB, a person can experience MDR TB if infected from another person who is positive for MDR TB or the germ has a mutation that results in resistance. The causes of MDR TB include the provision of tb therapy that is not appropriate and does not meet the standards can cause bacterial mutations to become resistant. In addition, an infectious period that is too long due to delayed diagnosis will lead to the spread of drug resistance strains. In DM patients, MDR TB may occur due to late eradication of *Mycobacterium tuberculosis* during treatment, treatment failure, death, relapse, or reinfection (Fisher-Hoch, et al., 2010). This may be related to the difficulty of treatment in DM patients whose blood glucose levels are not controlled and also the influence of interactions between TB (OAT) drugs and oral antidiabetic drugs.

Table 6. Frequency Distribution of Dm Type 1 Patients And Type 2 DM Patients With Non MDR Lung TB Infection And MDR TB At Cilacap Hospital In 2021

DM classification	Pulmonary TB Classification				Total	
	Non MDR		MDR			
	n	%	n	%	n	%
DM Type 1	1	100	0	0	1	100
DM Type 2	136	85,53	23	14,47	159	100
Total	137	85,63	23	14,37	160	100

Overall, based on the results of research in Table 1, it is known that there are 160 (6.70%) DM patients infected with pulmonary TB from 2,400 (100%) DM patients at Cilacap Regional Hospital in 2021. In Table 4, it is known that of the 160 (100%) DM patients infected with pulmonary TB, 1 (0.63%) patients are patients with type 1 DM and 159 (99.37%) patients with type 2 DM. Then, in Table 6, it is known that 1 dm type 1 patient (100%) has a non-MDR pulmonary TB infection. Meanwhile, in 159 (100%) dm type 2 patients, 136 (85.53%) patients had non-MDR pulmonary TB infections and 23 (14.47%) patients had MDR TB. Pulmonary TB infection is more common in dm type 2 patients, this can be attributed to type 2 DM occurs a lot in patients with elderly age. Where in the elderly age immunity will decrease, due to increasingly uncontrolled DM and the function of cells β the pancreas is increasingly disturbed. So that type 2 DM is more susceptible to being infected with pulmonary TB. When compared to type 1 DM, dm type 1 patients do not have a higher risk of being infected with pulmonary TB. This can be attributed to type 1 DM patients which occurs a lot in the adult age group instead of the elderly, so that the immunity of type 1 DM patients has decreased but has not been as severe as in type 2 DM patients.

Based on the results of the study, DM patients at Cilacap Hospital experienced more non-MDR pulmonary TB infections. This is indeed related to the immunity of DM patients who have decreased resulting in the body being easily infected with *Mycobacterium tuberculosis* bacteria. In general, DM patients only experience non-MDR pulmonary TB infections. However, in a condition DM patients may experience MDR TB. As the results of my study in Table 6, it is known that there were 23 dm type 2 patients who had MDR TB. A person can experience MDR TB if they contract another person who is positive for MDR TB or the germ has a mutation that results in resistance. MDR TB can occur in DM patients for several reasons. Delay in diagnosis is one of the causes of MDR TB. Delay in diagnosis (too long infectious period) results in the spread of drug resistance strains. In addition, MDR TB can also occur due to treatment failure. As previously explained, dm type 2 patients occur a lot in the elderly, where in this elderly age blood sugar control is increasingly disturbed. In addition, in type 2 DM, HbA1c levels are also increasingly uncontrolled, this can affect tb treatment in DM patients. If blood glucose levels are not controlled, then TB treatment in type 2 DM patients will be disrupted or will even fail, which can then cause type 2 DM patients to experience MDR TB infection. In addition, the difficulty of TB treatment in DM patients due to the interaction between TB drugs (OAT) and oral antidiabetic drugs can also be associated with the occurrence of MDR TB in type 2 DM patients.

There is another thing that can affect uncontrolled blood glucose levels in type 2 DM patients which will eventually cause difficulty in TB treatment in type 2 DM patients so that it can cause MDR TB. This is the occurrence of obesity in type 2 DM patients and a poor lifestyle. Obesity contributes greatly to cases of type 2 DM. Obesity is caused by a poor lifestyle, such as eating irregularly and not doing physical activity (exercise). Obesity results in a buildup of fat cells in the body and increases inflammation. Inflammation results in insulin resistance in type 2 DM which will lead to hyperglycemia and decreased ibmmunity of type 2 DM. The immunity of type 2 DM patients which is decreasing and along with the body condition of type 2 DM patients who are obese and a poor lifestyle will increase the risk of uncontrolled glucose levels in the blood, so that it can affect the difficulty of pulmonary TB treatment which can lead to the occurrence of MDR TB.

Table 7. Frequency Distribution of Type 1 DM Patients With Non-MDR Pulmonary TB Infection And MDR TB Based On Gender And Age Group At Cilacap Hospital In 2021

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Gender and Age Group	Pulmonary TB Classification				Total	
	Non MDR		MDR			
	n	%	n	%	n	%
Male Teenagers - adults	0	0%	0	0%	0	0%
Male Elderly	0	0%	0	0%	0	0%
Total	0	0%	0	0%	0	0%
Female Teenagers – adults	1	100%	0	0%	1	100%
Perempuan Elderly	0	0%	0	0%	0	0%
Total	1	100%	0	0%	1	100%

Based on Table 6, it is known that 1 (100%) dm type 1 patients have non-MDR pulmonary TB infection. Based on Table 7, it is known that 1 dm type 1 patient infected with non-MDR pulmonary TB is female and belongs to the adolescent – adult age group.

Table 8. Frequency Distribution of Type 2 DM Patients With Non-MDR Pulmonary TB Infection And MDR TB Based On Gender And Age Group At Cilacap Hospital In 2021

Gender and Age Group	Pulmonary TB Classification				Total	
	Non MDR		MDR			
	n	%	n	%	n	%
Male Teenagers - adults	13	68,42	6	31,58	19	100
Male Elderly	50	86,21	8	13,79	58	100
Total	63	81,82	14	18,18	77	100
Female Teenagers – adults	7	53,85	6	46,15	13	100
Perempuan Elderly	66	95,65	3	4,35	69	100
Total	73	89,02	9	10,98	82	100

Based on Table 6, it is known that dm type 2 patients infected with non-MDR pulmonary TB totaled 136 (85.53%) patients and those infected with MDR TB totaled 23 (14.47%) patients. Based on Table 8, it is known that dm type 2 patients who are male sex total 77 (100%) patients, with those infected with non-MDR pulmonary TB totaling 63 (81.82%) patients and those infected with MDR TB totaling 14 (18.18%) patients. Meanwhile, type 2 DM patients who were female totaled 82 (100%) patients, with

those infected with non-MDR pulmonary TB totaling 73 (89.02%) patients and those infected with MDR TB totaling 9 (10.98%) patients.

Based on Table 8, it can also be known about dm type 2 patients who are male and fall into the age group of adolescents – adults infected with non-MDR TB totaling 13 (68.42%) patients and those infected with MDR TB totaling 6 (31.58%) patients. Meanwhile, type 2 DM patients are male and enter the elderly age group infected with non-MDR TB are 50 (86.21%) patients and those infected with MDR TB are 8 (13.79%) patients. Type 2 DM patients are female and fall into the adolescent – adult age group infected with non-MDR pulmonary TB totaled 7 (53.85%) patients and those infected with MDR TB 6 (46.15%) patients. Meanwhile, dm type 2 patients who are female and fall into the elderly age group infected with non-MDR pulmonary TB totaled 66 (95.65%) patients and those infected with MDR TB 3 (4.35%) patients.

As previously discussed, in the results of the study I conducted, the DM patients who were most infected with pulmonary TB were women. This is different from the results of previous studies, such as from the Depari study (2019) with the results of 22 pulmonary TB positive DM patients. 15 patients were male and 7 were female. In addition, there was a study on dm type 2 patients from Hapsari & Isfandiari (2017) which gave results from 38 samples of type 2 DM patients infected with pulmonary TB, 23 patients of male sex and 15 patients of female sex. The cause of this difference can be attributed to the large number of dm patients of female sex at Cilacap Regional Hospital and many female DM patients have visited health service facilities, because they are no longer affected by the negative stigma of pulmonary TB. However, in type 2 DM patients infected with MDR TB, it is most common in men. This can be attributed to bad habits of men, such as liking to smoke, consuming alcohol, liking to spend time outside the home, and engaging in work that has a high risk of being infected with pulmonary TB. This bad habit that occurs in men, then accompanied by type 2 DM patients who mostly experience impaired blood glucose control can make TB treatment in DM patients less controlled or there can even be failures in treatment which results in male type 2 DM patients can experience MDR TB.

Based on the results of the study in Tables 7 and 8, pthere is 1 female type 1 DM patient who has a non-MDR pulmonary TB infection has an age that falls into the adolescent – adult age group. This is in accordance with previous theories that dm type 1 occurs a lot in adolescents – adults instead of the elderly. In addition, the age group of adolescents – adults is not more susceptible to being infected with pulmonary TB, so in this study type 1 DM infected with pulmonary TB only amounted to 1 patient. Meanwhile, type 2 DM patients who experience non-MDR pulmonary TB infection or MDR TB, both male

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and female, mostly occur in the elderly age group. This is in line with Janis's (2008) research which states the age of type 2 DM sufferers with the most pulmonary TB at the age of over 45 years. In addition, this is also in line with research by Hapsari & Isfandiari (2017) which states that patients with type 2 DM accompanied by pulmonary TB occur in the elderly age group. Type 2 DM occurs a lot in the elderly age group. The elderly age group will experience worse and worse pancreatic β cell function and in the elderly generally have suffered from DM for a long time and DM control is getting more and more uncontrolled, so that immunity in elderly patients will decrease and it will be easier to become infected with pulmonary TB.

4. Conclusion and Sugestion

Conclusion

Dm patients at Cilacap Regional Hospital in 2021 totaled 2,400 patients, with 160 (6.70%) patients infected with pulmonary TB. The percentage of DM patients with pulmonary TB infection by gender is most common in women, which is 51.87%. While in men it was 48.13%. Based on age group, it is most common in the elderly age group, which is 79.37% of patients. The incidence of pulmonary TB infection in DM patients is most common in type 2 DM patients, which is 99.37%. While in dm type 1 it is only 0.63%. DM patients infected with pulmonary TB (Non-MDR) were 85.63% patients and those infected with MDR TB were 14.37% patients.

Suggestion

It is recommended in DM patients who have pulmonary TB infection to always do routine examinations in an effort to monitor blood glucose levels so that pulmonary TB treatment in DM patients can be done properly. As for researchers, it is necessary to conduct research on HbA1c which has a major influence on the incidence of pulmonary TB infection in DM patients. In addition, subsequent studies using different examination methods in the detection of pulmonary TB infection in DM patients. For hospitals, they always provide routine check-ups to DM patients so that the blood glucose levels of DM patients are always controlled, provide pulmonary TB screening examinations for DM patients, and provide socialization to DM patients about the easy incidence of pulmonary TB infection in DM patients.

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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VALIDATION OF ANDROID-BASED APPLICATION :
ISLAMIC SPIRITUAL MINDFULNESS FOR PRENATAL ANXIETY

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Abstract

The rapid development of technology allows midwifery services to be carried out using android-based smartphones. It aims to improve the quality of life of pregnant women by empowering them to reduce anxiety during pregnancy. The experience of pregnant women in the Islands area that more anxiety because the condition of access to delivery services are far from the city and more health workers who are rarely in the health care makes mothers' anxiety facing childbirth increase. So, the android application is developed with the concept of Research and Development (R&D) starting with identifying potentials and problems, collecting information, designing android applications, expert validation tests to design revisions finally the application is declared worthy of trial with the final revision process to overcome this problem.

The validation instrument used a questionnaire distributed with Google Form to three experts in their expertise areas. The results of the study found the average value of the Application feasibility test was 92.80% which a category is very high. Further research on the Android application can be developed continuously by adding features such as health information about Maternal health (telehealth) or adding Human in the Loop which functions as a provider of psychological problem consultation.

Keywords: *Application Development; Prenatal Anxiety'; Islamic Spiritual Mindfulness*

1. Introduction

The prevalence of psychological disorders in pregnant women in developing countries at high risk is 15.6% and 19.8% occur in postpartum mothers (WHO, 2014). Psychological disorders can also occur in developed countries such as France with a percentage of 7.9% of primigravida mothers having anxiety, 11.8% are having depression, and 13.2% are having both during pregnancy (Ibanez et al., 2014). The percentage of prenatal anxiety in Indonesia in 2012 in primigravida mothers was still relatively high, reaching 83.4% with severe anxiety and 16.6% with moderate anxiety (Depkes RI, 2015).

Several studies explain that the psychology of pregnant women such as anxiety is influenced by the COVID-19 pandemic by 76.2% (Durankuş & Aksu, 2020). So it needs support from midwives and other health workers because it's very important to support women's mental health during the pandemic (Durankuş & Aksu, 2020; Matvienko-Sikar et al., 2020). There is a gap in services for pregnant women in the archipelago who don't get comprehensive health services due to the lack of access and availability of adequate health workers (Suharmiati et al., 2012).

Antenatal Care (ANC) visit services during the COVID-19 Pandemic are also recommended to be minimized and eliminate the class of pregnant women (Dirjen Kesmas, 2020). It can impact the ANC's less comprehensive care, so alternatives are needed such as utilizing services in online methods to give the comprehensive ANC services that can still be carried out without meeting face to face.

The rapid technology development allows midwifery services to be carried out through android-based smartphones. Nowadays, the world estimated that 90% of adults have a smartphone (PERRIN, 2015). The use of information technology from smartphone devices in Midwifery services can improve the quality of life for pregnant women by helping to provide interventions independently. Researchers have an innovative idea to develop an android application called MiSIs-PreTy (Mindfulness Spiritual Islam for Prenatal Anxiety) which helps pregnant women in checking their psychological conditions and can deal with their anxiety conditions by lowering prenatal anxiety symptoms using Islamic Spiritual Mindfulness (MSI) interventions. The anxiety of pregnant

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women will culminate when entering the Third Trimester of pregnancy because they will face the delivery process (Zengin et al., 2020). By knowing the anxiety condition of the mother using the MiSIs-PreTy application, pregnant women can control themselves so that it will affect their physical, psychological and spiritual when facing childbirth.

The MiSIs-PreTy application is equipped with the content of an anxiety measurement instrument in pregnant women, namely PrAQ-R2 (Pregnancy-related Anxiety Questionnaire -Revised2) where this instrument can be used for primiparous mothers (first time pregnant) and multiparous mothers (having children >1) (Huizink et al., 2016). MiSIs-PreTy is also equipped with Islamic Spiritual Mindfulness exercises that aim to train mothers to always remember Allah Swt. so that mothers consciously understand the conditions and the event of their experiences aren't accidentally but have been planned by Allah Swt. This encourages the practice of acceptance and awareness of thoughts, emotions, and sensations of the mother's body to reduce reactivity, tolerate anxiety and fear, and avoid unpleasant childbirth experiences. The purpose of this study is generally to produce a valid and interesting android-based application so if this application is indeed useful then the exercise can be applied in the ANC service, especially to fulfill the psychological and spiritual needs of the mother in the face of her childbirth.

2. Method

This type of research is Research and Development (R&D) where this research aims to develop the MiSIs-PreTy (Islamic Spiritual Mindfulness for Prenatal Anxiety) Application. The Model of research and development by Borg and Gall has been modified by Sugiyono. R&D describes the steps of this research procedure, which consists of (1) Potential and problems; (2) Data and information collection; (3) Application product design; (4) Expert validation; (5) Design revision; (6) Trial of application product; and last (7) Revision of product (Sugiyono, 2014). The step of application product trial and product revision can be done when the application has been validated and declared eligible for small-scale trials. The instrument used an instrument or questionnaire that contains software quality measurement questions based on the ISO 9126 International Standard by

looking at 6 aspects of assessment, There are usability, reliability, functionality, efficiency, maintainability, and portability through Google form. This instrument has been tested for validity with a question item of 0.950 each and the reliability of this instrument with Alpha Cronbach > 0.60 (Devianto, 2017). This concludes that the software or application quality assessment instrument has been valid and reliable. The validation test respondents in this study were material experts, technology and information media experts, pregnancy psychology experts, and 30 pregnant women respondents who were carried out small-scale trials.

The analytical techniques used are qualitative analysis and quantitative analysis. The qualitative data obtained is in the form of inputs and recommendations from validators, while quantitative data is obtained from the results of scores filled in by validators using calculation formulas. The formula used to process the data from the validation results of experts is obtained from the following modifications :

$$Vm = \frac{TSe}{TSh} x100\%$$

$$Vd = \frac{TSe}{TSh} x100\%$$

$$Vti = \frac{TSe}{TSh} x100\%$$

$$Vt = \frac{Vm + Vd + Vti}{2}$$
$$= \cdots \%$$

Figure 1. *Expert Validation Data Processing Formula*

3. Result and Discussion

The results of the observation of potential, problems and information collection become a reference source in making a rough framework application. Researchers gave the name of the application, MiSIs-PreTy. Application feasibility testing was carried out online with 3 validators with different expertise, they are Dr. Meidiana Dwidiyanti, S.Kp., M.Sc as a founder of Islamic Spiritual Mindfulness (MSI) science, and Mr. Muhammad Irfan, ST as an Information and Technology (IT) expert and Mrs. Nuzulia Rahma, S.Psi., Psi as Maternal Mental Health expertise obtained the following results :

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Table 1. Expert Validation Test Results

Validator	N	Validity Score	Percentage	*Mean*
Material Expert	25	118	94,40%	
IT Expert	25	121	96,80%	92,80%
Design Expert	25	109	87,20%	

Table 1. showed the results of the MiSIs-PreTy Application validity test obtained the validation results of material experts are 94.40%, Technology and Information (IT) media experts gave a validation score of 96.80% and maternal mental health psychologists gave a validation score of 87.20%. The average validation score of the MiSIs-PreTy App is 92.80% with a category very high. These results show that the applications that have been built can be declared by experts to be feasible for research trials with a limited population (small scale) so that the effectiveness of the MiSIs-PreTy Application to lower anxiety can be measured. In addition to getting an assessment score, researchers get input or recommendations from validators as follows:

Table 2. Expert Recommendations

Experts	Recommendations
Islamic Spiritual Mindfulness Material	Minimize the theory inside the application
Information and Technology Media	The user interface, user experience, and functionality are good and appropriate, but it doesn't rule out the possibility that the application can be developed either in terms of educational materials or by adding other methods and features.
Maternal Mental Health Instrument	Some sentences need adjustment, especially during mindfulness. Images and colors need to be more "girly"

Researchers get the results of the recommendations in Table 2. as consideration for researchers to revise the design of the MiSIs-PreTy Application based on input from experts. The first revision carried out is to revise the material entered into the application. At the beginning of the design, researchers included theories about: (1) The introduction of prenatal anxiety; (2) Anxiety reduction interventions; and (3) Preparation for childbirth. After the revision process, the theory or information is still maintained to recognize anxiety and prepare for childbirth because according to validators the theoretical material is still related. So that the omitted or revised theory about anxiety-reducing interventions.

The next revision is based on input from Maternal Mental Health experts for colors, text, and images (Icon) that will affect the mother's psychology. The following is an overview of the MiSIs-PreTy Application before and after it was revised:
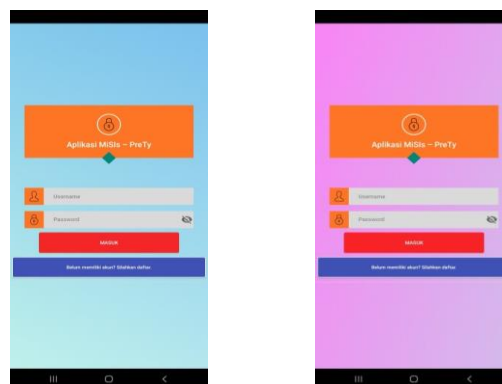
Figure 2. *MiSIs-PreTy App Color Revision Before (left) and After (right)*
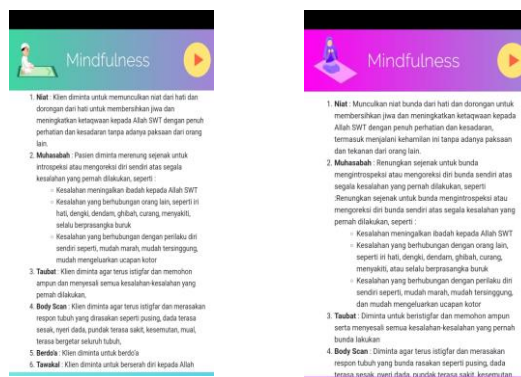
Figure 3. *Revision of the Spiritual Mindfulness Practice Text before (left) and after (right)*
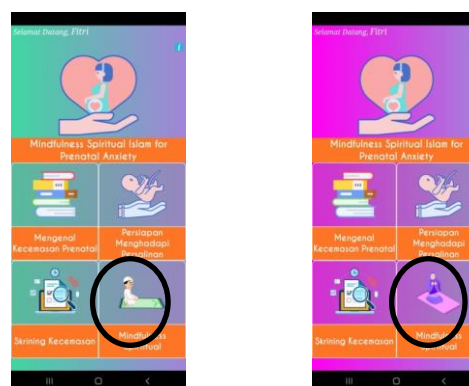
Figure 4. *Revision of the Spiritual Mindfulness Icon Before (left) and After (right)*

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After revising the design with information technology experts, researchers continued to conduct product trials using research respondents to see the effectiveness the feasibility of the application to reduce anxiety in the face of childbirth. The procedure for implementing trials of respondent activities starts from activating the application by obtaining a username and password so that the confidentiality of respondent data is maintained. Until the end of the post-test, anxiety measurement returns by filling in the applied anxiety data.

After completing the anxiety score data, both pre-test and post-test from the implementation of this trial, researchers also evaluated by distributing questionnaires to assess applications that had been developed online to respondents. The results of the respondent's assessment can be seen in the table below:

Table 3. MiSIs-PreTy Application Product Trial Evaluation Results

No.	Statement	Answer Results	
		Yes	**No**
1.	I will probably use the MiSIs-PreTy application a lot	15 100%	0 0%
2.	I think there is a part (feature) in the application that is quite troublesome that should not be necessary	2 13,3%	13 86,6%
3.	I found it easy to use this application	15 100%	0 0%
4.	I seem to need help to be able to smoothly use this application	1 6,6%	14 93,3%
5.	I think the features in this application have been well integrated	15 100%	0 0%
6.	I found a lot of things that don't be consistent in this application	0 0%	15 100%
	Average score of positive values = 96,65% Average score of negative values = 3,35%		

The results of the evaluation above (Table 3.) show that the average assessment of the MiSIs-PreTy Application from respondents is 96.65% or with category very high. The problem conveyed by the respondents is that the application features are annoying or inconvenient for users. Researchers tracked the problem to the Mindfulness practice feature where after doing Mindfulness the mother was required to enter a calm evaluation value (score 1-10) and the mother felt no need to do. However, because this study requires supervision and accuracy of data, so researchers provide this

feature to monitor mothers in the process of their Mindfulness exercises. The results of this evaluation are also the input for product revision.

The results of small-scale trials found that the MiSIs-PreTy Application is effective in reducing anxiety in facing childbirth in primiparous pregnant women during the COVID-19 Pandemic. This is evidenced by the analysis of research data obtained with a p-value of < 0.05 with a degree of confidence (CI) of 95%. Based on these results, the researcher did not make major revisions in changing the application. Researchers changed the audio of the sound of mindfulness implementation with a softer voice, as a recommendation by psychologists so that mothers are more comfortable listening and following those Mindfulness steps. Another consideration of changing the application algorithm is that respondents must fill out anxiety measurement pretests first before accessing the information that is applied so that the bias of the research results is reduced.

The quality of application feasibility measurement is supported by assessments of 6 aspects. The first aspect is usability, obtained the average result of the three validators of 90% with a very high category. These results were proven by the effectiveness of reducing the anxiety score before and after using the Application by 11.8 by conducting usability testing or product trials. In the aspect of usability, researchers also pay attention to the aesthetics of application design to make it more enjoyable by revising the design.

The second aspect that is measured is the reliability of this application. This is related to the reliability of the software, namely the MiSIs-PreTy application in collecting research data with design accuracy that has been compiled based on the application module. The value obtained was 97.78% which is categorized as very high. This shows that the MiSIs-PreTy application can be relied upon in understanding its functionality with the framework that has been compiled. The next third aspect is the functionality obtained an assessment score of 94.67%. When using the application or testing the application is running 100% well, each feature brings up the appropriate information and the sound audio can be played properly.

Efficiency is the fourth aspect assessed in this application with a score of 95.56% a very high category. After testing, if you look at efficiency, the application can respond quickly with an average load time of 1.55 seconds (acceptable). The next aspect is to look at the maintainability with a score obtained of 89% with a very high

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category. The MiSIs-PreTy application is included an application that's easy to make improvements and can be developed in other aspects of materials and features such as the addition of an Artificial Intelligence (AI) system, an online Networking system with health information about maternal health (telehealth), or with the addition of Human in the Loop which functions as a provider of psychological problem consultation services between pregnant women and psychologists.

The sixth aspect assessed is portability where the assessment results are obtained by 100%. In this aspect, the MiSIs-PreTy application was successfully downloaded on all respondents' android smartphones that were tested without errors. The admin web portal is also easily accessible both on android mobile and computer desktop browsers.

The opportunity of the MiSIs-PreTy Application is also very good where the development of the current information technology era supports midwifery services carried out through android-based smartphones. This is supported by other studies that intervened in spiritual mindfulness by using an android application on the patient's spiritual level with a p-value of 0.000 (Agustriyani et al., 2020). Based on other literature, it's also explained that the Mindfulness mobile application can reduce stress levels in students by utilizing technology media (Ningsih et al., 2018).

4. Conclusion and Sugestion

The application development process has been running with 7 stages of Research and Development (R&D). Research procedures with the results of the application are worthy of use. The application can be developed continuously by adding features such as health information about maternal health (telehealth) or by adding Human in the Loop which functions as a provider of psychological problem consultation services between pregnant women and pregnancy psychologists so that pregnant women in a return far from this facility can access it through the Android application.

5. Acknowledgments

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THE KNOWLEDEGE AND SOCIAL SUPPORT TO REDUCE DIABETES DISTRESS : A SYSTEMATIC REVIEW

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Abstract

Introduction- The diagnosis of DM had maked the patient in a condition susceptible to stress caused by the patient finding it was difficult to do diabetes self care management. The demands of diabetes self-care management require DM patients was able to adapted which can cause patients to experience Diabetes Distress. This systematic review summarized how knowledge and social support could prevent or reduce Diabetes Distress Scale.

Purpose – The purpose of this systematic review was to review the extent to which knowledge and social support could prevented or reduced diabetes in the community.

Methodology/Approach – A systematic review of high quality review articles, randomized control trial and meta analyses focused on knowledge and social support to reduce diabetes distres was conducted. Articles were included if published between 2015 - 2022

Findings – Diabetes distress intervention by improving knowledge and social support was a strategy to prevented DM patients from experiencing distress caused by difficulties in managing DM. This intervention strategy was expected to increase self-efficacy diabetes management, and the use of adaptive coping. Thus, patients can adhere to the diet and all type of treatment that have been suggested.

Originality/ Value/ Implication – This systematic review found evidence that knowledge and social support improve self effication among diabetes distress patients. The finding suggest Diabetes Distress Management that improve knowlede and social support can be use direction for improving Diabetes Distress care.

Keywords: Knowlede; Social Support; Diabetes Distress

1. Introduction

The diagnosis of DM causes the patient to susceptible to stress. Stress occurs when the demands of the situation are felt different from the previous situation and are too heavy. The difficulty and inability of DM patients in adjusting to the demands caused by their illness will cause distress within themselves and result in unhealthy, negative and destructive as Diabetes Distress (Berry et al., 2015). This negative psychological reaction is associated with the emotional burden and worry of living with a chronic illness that requires managing the disease and the threat of complications. (Fisher Lawrence, William H. Polonsky, Danielle M. Hessler, Umesh Masharani, Ian Blumer, Anne L. Peters, Lisa A. Strycker, 2016) The characteristic of stress about inability of diabetes self care, access to care, and duration of DM. This Diabetes

Distress can cause low motivation to diabetes self care management (Al-Qahtani, 2020; Berry et al., 2015; Fisher L. , J. S. Gonzalez, 2014). Based on the results of the study, the prevalence of Diabetes Distress was 55.9% (Hu et al., 2020; Kelly & Ismail, 2015; Yajurvedi, 2018).

Diabetes Distress can appear by itself in various forms that are influenced by the level of knowledge and social support from around the patient (Arifin et al., 2019; Stoop et al., 2014). The patient's level of knowledge about DM and its treatment can prevent patients from experiencing distress. This is related to higher cognitive abilities which can be a buffer against the occurrence of distress. In a cross-sectional study, participants with low knowledge were more likely to experience distress so they had to rely on caregivers due to difficulty understanding medical explanations. In addition, social support is a factor that is no less important

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in preventing or reducing the risk of Diabetes Distress. DM patients who receive positive support will increase self-efficacy, psychological well-being and glycemic control (Pamungkas et al., 2017).

By systematically examining published review articles this summary provides health care decision makers with the current evidence to evaluate knowledge and social support solutions for Diabetes Distress Management that address the Standards, evolving models of care and appropriate behavioral frameworks.

2. Method

The reviewer searched for English language articles published between 2015 – 2022 from ProQuest, Science Direct and PubMed. Data from the publications identified were extracted into an Excel spreadsheet. The supplementary materials that are summarized are collected by types of data. This review described the impact of knowledge and involvement of social support in Diabetes Distress Scale among Diabetes Melitus patients. We used the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) statement of all stages of the review (Page et al., 2021). (Figure 1)

Three searches were performed and there were 111 articles. Only publications in peerreviewed journals were considered, with using the keywords knowledge, social support and Diabetes Distress.

Eligibility criteria use The PICO (Participant -Intervention-Comparasion-Outcomes) form (Amir-Behghadami & Janati, 2020). A total of 95 articles were excluded because they were incomplete, duplicate, not relevant to the topic, the respondents were patients with gestational diabetes mellitus, ollder patient and child patient, and the articles were not in English.
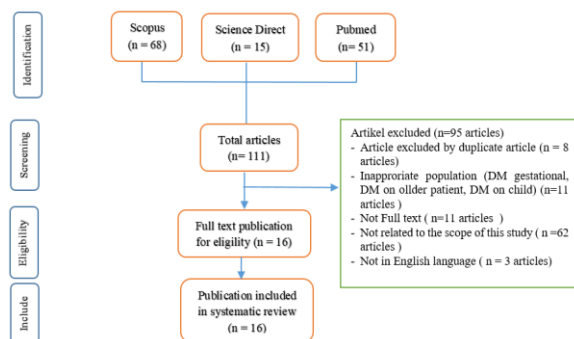
Figure 1 PRISMA flow diagram. Study selection. Searched Pubmed, Scopus,and Science Direct

3. Result and Discussion

The literature seacrh identified 111 publications overall (figure 1). Twenty studies have been identified base on the inclusion criteria of investigating knowledge and social support to reduce Diabetes Distress (tabel 1) (Alanazi, 2021; Arifin et al., 2020; Asuzu et al., 2017; Bachmeier et al., 2020; Desroches et al., 2021; Dobson et al., 2016; Espinoza et al., 2020; Flood & Henman, 2015; Habibi Soola et al., 2022; Joensen et al., 2017; Ju et al., 2018; Kurnia et al., 2017; Mathiesen et al., 2021; McCoy & Theeke, 2019; Patel et al., 2015; Rønne et al., 2020; Van Puffelen et al., 2018; Vorderstrasse et al., 2015; Yu et al., 2021).

Table 1. *Diabetes Knowledge, Social Support and Diabetes Distress Outcomes*

Reference	Design	Sampel size	Study Details	Out comes
Melissa A. McCoy(McCoy & Theeke, 2019)	A systematic Review study	22 published articles between 1996 and 2018	Summarization of recent literature increased social support related to emotional distress	Articles included reported social support can increase healty coping
King Saud bin Abdulaziz (Alanazi, 2021)	A descriptive study	A total of 118 participants.	The participants answered the instruments: Socio demogra-phic and Physiologi-cal Data Question-naire	The BMI, Diabetes knowledge, diabetes distress, and the level of HbA1C explained 28% of the variance in Diabetes Self Manage-ment
Aghil Habibi Soola (Habibi Soola et al., 2022)	A Cross-sectional study	273 participans with type 2 diabetes	The study identified information about demographic imcluding screening about diabetes distress, diabetes knowledge, and diabetes empowerment	The result of this study showed that patients knowledge (p=0.002), personal support (p=0.002), interpersonal support (p=0.001), family/friends support (p< 0.001), neighbor support (p< 0.001), and support of organization (p=0.013)
Sophi	A	13.114	The study	Thirty-one

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Author	Study	Sample	Method	Results
e Desroches(Desroches et al., 2021)	survey of recent national study	ciatation from January to October 2018	identified 13.114 through searching databases. To inform about knowledge, the researcher sent an email uses Knowledge Translation (KT) tools	of the 1,700 eligible about clinical, decision support, knowledge about diabetes include diabetes distress. Thirty-one
Lene E. Joensen(Joensen et al., 2017)	A cross-sectional survey during 2012 in 17 countries	The sample of study was 8596 participants with diabetes	The study was part of the Diabetes Attitudes Wish and Needs (DAWN2)	The participants lived with other but no partner significantly lower well-being, higher diabetes distress and worried about hypo glycemic
Neesha R Patel (Patel et al., 2015)	A mixed methods study	The partisipants of this study was 67 were recruited	The study used a questionnaire measuring illness beliefs, fatalism, health outcomes The study	The study found quantitative data about certain social network characteristics were related to perceived concern, emotional distress and health outcomes (p < 0.05).
Christopher C. Asuzu(Asuzu et al., 2017)	A cross-sectional study	615 adults with type 2 diabetes	The study found the psychosocial factors associated with diabetes outcomes	The final model showed that higher diabetes distress was directly significantly related to a decreased self-care (r = -0.69, p < 0.001) and increased HbA1C (r= 0.69, p < 0.001).
Anggraini Dwi Kurnia (Kurnia et al., 2017)	A cross-sectional study	A total of 127 adults with type 2 diabetes were recruited	Data were collected by questionnaires	The scores (i.e diabetes knowledge, perceived benefit of diabetes self managemen t, diabetes distress, perceived self-efficacy, social support, situasional influence and diabetes self-management) were 13.75 ± 3.59, 34.9 ± 4.89, 3.03 ± 0.86, 3.60 ± 0.53, 27.79 ± 5.56, 3.27 ± 0.58, 3,81 ± 1.08
B. Arifin (Arifin et al., 2020)	A qualitative study	50 participants of PROLANIS in Primary Health Care 50	The study using FGD and indepth interveiws methods	Diabetes distres was evoked by distress concerning healthcare services, diet, routine medication, monthly blood sugar checks, interpersonal distress and no social support
Bernadette (Flood & Henman, 2015)	A survey study	Diabetes patients with a mild intelectual disability, age 30-40 years old who lived with his family outside	The study interviewed the diabetes patients with an intellectual disability	Patients with disabilities intelectual were more likely to get severe complex condition, and may develop diabetes distress
Carollin A.E (Bachmeier et al., 2020)	A cross-sectional study	A total of 279 participants attending the during 12 month	Over 12 month young adult diabetes (18-25 years) attending diabetes clinic were offered	Over the 12 month 155 participants had severe diabetes distres (PAID : 20 ≥ 40) was found in 19.4%. PHQ-4 identified 25.8% with anxiety and 16.1% with

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Author	Method	Sample	Study description	Results
				depression.
C. Ju (Ju et al., 2018)	A cluster randomized trial	400 partisipants adults with type 2 DM	All participants received diabetes education. The primary outcome was diabetes distress measured using the diabetes distress scale	The peer support with improvement education had greater reductions in regiment related distress (1.4 ± 0.6 vs 1.2 ± 0.4 ; p = 0.004) and total distress (1.3 ± 0.4 vs 1.2 ± 0.3; p = 0.002)
Kexin yu (Yu et al., 2021)	A mixed methods study	A total 118 participants to understand their status quo of using mobile technology	The study was used to assess participants current technology use for general and health related purpose	Regarding using technology for health reasons, were more likely to look for health information for them selves (OR = 6.21, SE = 3.39, $p <.01$) and for others (OR = 5.74, SE = 3.39, $p <.01$).
S.T Ronne (Rønne et al., 2020)	A mixed methods study	A total 3406 records, include 23 studies about diabetes management and severe mental illness	A systematic literature were searched using Medline, Embase, PsycINFO, Cinahl, the Cochrane Library, and the Web of Science	Low health literacy level and no information valuable were identified as psychological barriers to diabetes self-care. The studies found perceived support to be a predictor of to reduce distress.
Rosie Dobson (Dobson et al., 2016)	A cluster randomized trial	1000 participants has been recruited	1000 participants randomised at a 1:1 ratio to receive SMS4BG, a theoretically based and individually tailored automated text message-based diabetes self-manage	The presence of diabetes-related distress measured by the 2-item Diabetes Distress Scale (DDS2) at baseline and at 9 months. This 2-item brief diabetes distress
			ment support programme (intervention)	screening instrument detects diabetesspecific distress.
Pilar Espinoza(Dobson et al., 2016)	a qualitative descriptive approach	30 patients and 32 clinicians from three community health centers	They conducted focus groups comprised of 30 patients and 32 clinicians from three community health	Patients with Type 2 diabetes in this sample found seeking access, attending numerous appointments, and working with their clinician as contributors to their patient workload.

Sixteen studies examine the impact of knowledge and social support on outcomes among diabetes distress. Two studies were randomized controlled trials (RCT) (Dobson et al., 2016; Ju et al., 2018), three studies were conducted in descrptive and (Alanazi, 2021; Arifin et al., 2020; Espinoza et al., 2020), two stidies used a mixed-method design (Patel et al., 2015; Yu et al., 2021), two studies were in survey design(Desroches et al., 2021; Flood & Henman, 2015), five studies used cross sectional design (Asuzu et al., 2017; Bachmeier et al., 2020; Habibi Soola et al., 2022; Joensen et al., 2017; Kurnia et al., 2017), and two studies used systematical review (Mathiesen et al., 2021; McCoy & Theeke, 2019).

Efforts to improve knowledge and maximize social support are strategies that offer assistance to DM patients. This strategy is a combination strategy that is used to empower DM patients to be able to manage Diabetes Self-Care. Patients with diabetes mellitus is high risk of distress due to the patient's inability to manage their disease and worry of complications.(Dobson et al., 2016; Espinoza et al., 2020; Ju et al., 2018; Rønne et al., 2020)

This literature review found that the involvement of families, partners, and health professionals using a collaborative approach has been widely proven to reduce negative emotional behavior in DM patients. The type of social support such as emotional support in solving problems can help DM patients to avoid Diabetes Distress. Another type of social support that can be done is to provide information to increase patient knowledge about diabetes management

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as an effort to prevent complications (Kurnia et al., 2017; McCoy & Theeke, 2019; Patel et al., 2015). In addition, the role in facilitating, accommodating, reminding and motivating DM patients to comply with DM management is also classified in the social support discussed in this literature. (Pamungkas et al., 2017)

Several studies in this literature review utilize technology in intervention programs as a type of social support as well as a means of providing information about diabetes management (Dobson et al., 2016; Vorderstrasse et al., 2015; Yu et al., 2021). However, the shortcomings in the strategy for using technology were explained that not all participants understood how to use technology. In this case, educational background is very influential in utilizing technology to obtain information about diabetes and diabetes management (Flood & Henman, 2015; Yu et al., 2021). To overcome this, nurses are expected to provide support using a participatory learning approach by involving the role of the family. To effectively engage family members in the intervention, it is necessary to have a clear understanding of the theoretical basis of diabetes management in family members and their follow-up. In the short term, interventions can be carried out using several strategies, including weekly follow-up, either face-to-face or virtually, to conduct discussions in designing action plans and modifying action goals.

The follow-up method is an important component in diabetes management to identify barriers experienced and solve patient problems. Follow-up was also carried out as an effort to develop goals and further action plans by considering each successful diabetes management of the patient, thereby reducing distress.

In carrying out a follow-up strategy, nurses can combine the use of technological means (e.g. telephone) to monitor the achievement of diabetes management in patients by increasing knowledge and using adaptive coping, so as to increase self-efficacy for diabetes management. One study found significant improvement in clinical outcomes such as: HbA1c, blood pressure, lipid profile and BMI status after program implementation (Alanazi, 2021).

Diabetic distress is often experienced by DM patients, but increasing patient knowledge about DM management and involving social support can help patients avoid distress

4. Conclusion and Sugestion

Diabetes distress intervention by improving knowledge about diabetes management and social support is an integral part of preventing DM patients from experiencing distress caused by difficulties in managing DM. This intervention strategy is expected to increase self-efficacy diabetes management, and the use of adaptive coping. Thus, patients can adhere to the diet and all type of treatment that have been suggested. The expected end result is blood glucose levels and avoid complications that can arise. In conclusion, this systematic study found that improvements in DM management and social support could reduce stress and improve quality of life.

Futher study needs to provide details of knowledge improving dan social support compare the health outcomes (Table 1)

5. Acknowledgements

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"Education Transformation through Empowering Education and Health Professionals in Global Era"
Wednesday, June 14, 2022

Publisher : Politeknik Kesehatan Kemenkes Semarang
2022

THE INFLUENCE ANALYSIS OF KNOWLEDGE AND ATTITUDES TOWARDS MANAGING THE WASTE OF DISPOSABLE MASKS IN THE COMMUNITY IN WEST TANJUNGPINANG DISTRICT

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Abstract

Enhancement in COVID-19 cases caused the demand for masks to also increase, this is in accordance with a circular that requires people to wear masks. The increase in the use of masks, especially disposable masks, can cause new problems that must be of concern to the wider community, namely the handling of mask waste. Although the disposable masks used by the community based on the guidelines for managing the waste of disposable masks are not categorized as infectious waste but domestic waste, this waste can potentially be a source of pollution and environmental damage if not handled properly. This study aims to determine the effect of knowledge and attitudes on the management of disposable masks in the community in West Tanjungpinang District. This study uses a quantitative descriptive method with a *cross-sectional design*. The population of the study was 2,557 Heads of Families (KK). The minimum number of samples calculated using the Slovin formula was 346 Heads of Families (KK) with the technique *of random probability sampling*. Data were analyzed univariately with a frequency distribution table and bivariate analysis using *the chi-square test*. The test results show that there is a significant effect between how to manage mask waste and knowledge by the respondents with a *p value* = 0.006, while the attitude aspect does not have a significant influence on the way of managing waste masks and respondent's attitude with *p value* = 0.547 and there is a significant influence between knowledge and attitude towards the way of managing waste masks with *p value* = 0.001. It is recommended for further research to analyze other aspects that influence people's behavior in managing mask waste.

Keywords : *Knowledge, Attitude, Mask Waste Management*

1. Introduction

The emergence of Covid-19 cases was first discovered in China, precisely in the city of Wuhan at the end of 2019, with very fast transmission to various countries. More than 276 million people have contracted the coronavirus in the world with a fairly high death rate of more than 5 million. (WHO, 2021). The coronavirus appeared in Indonesia in early March 2020, due to very fast transmission, so it was known that there was an explosion of positive cases from 2020 to 2021. Based on information from the covid task force as of June 10, 2022, it is known that the total cases in Indonesia were 6,057,142 cases with a figure of 6,057,142 cases. 156,622 deaths. Transmission occurs through splashes of saliva containing the Covid-19 virus when coughing or sneezing, so transmission occurs very quickly.

The World Health Organization (WHO) issued a regulation in April 2020, so that all people, both healthy and sick, should wear masks. The Directorate General of Public Health followed up on the WHO recommendation by issuing a Circular on the Use of Masks and Provision of Handwashing Facilities with Soap (CTPS) to prevent the spread of *Coronavirus Disease 19* (COVID-19) 2020. This is aimed to protecting yourself and others from the spread of the virus. Respiratory protection or masks are not used to replace the method of choice that can eliminate the disease but are used to adequately protect the wearer (Cohen &

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Birdner, 2012). Masks are widely used to protect against particles and aerosols that can cause respiratory system diseases faced by people who do not wear personal protective equipment. Hazardous particles and aerosols of different sizes and chemical properties can harm human health. An agency that handles occupational health and safety issues in America, namely NIOSH (*National for Occupational Safety and Health*) recommends masks that use layers (Eshbaugh et al, 2009).

The regulatuons requiring the use of masks raises a new problem that must be of concern to the wider community, namely the issue of mask waste, especially single-use mask waste (Amalia Vina et all, 2020). An increase in mask waste will experience a buildup that has an impact on pollution and environmental damage.

In an article published as a collaboration between UNPAD and ITB, namely AMARI COVID-19 (Coronavirus Disease Insight Application 2019), it is known that medical masks or disposable masks are made of polypropylene with one type of raw material made of plastic. When decomposed this plastic turns into microplastics and shrinks into nano-plastics. The process of decomposition into microplastics produces toxins and organic pollutants, which if ingested by marine animals can cause poisoning. Some animals also get caught in the mask straps, making it difficult for the animal to move to find food, then the animal will die. (Admamari, 2021).

The use of masks will certainly not cause new problems if the community knows the management of mask waste. Based on the guidelines for managing waste masks from the community made by the Ministry of Health, the Directorate General of Environmental Health, it is known that the waste masks used by the community are not included in the category of medical waste that is used by the community. It is not treated as medical waste in health facilities because it is not used in services health or patients in the Health Facilities so it is included in the category of domestic waste, so the treatment is similar to management waste domestic per Law Number 18 of 2008 about Waste Management.

The disposables produced by the community are simply thrown away without handling, while the waste must be managed from the collection, disinfection, changing the shape of the mask, and then disposal. There are some cases where irresponsible parties collected waste masks and resell them to the community. This has the potential to cause the transmission of various types of diseases.

The careless disposal of waste masks is caused by the lack of education or public knowledge about how to properly handle mask waste. Many factors can influence people's behavior, namely intrinsic factors (age, intelligence, emotional level) and extrinsic factors (environment, education, socioeconomic, culture). The indicators that can be used to determine the level of knowledge or awareness of health can be grouped into the knowledge of illness and disease, knowledge of health care and healthy living, and knowledge of environmental health.

In addition to knowledge, attitude is also a factor that becomes a tendency to act (practice). Attitude does not necessarily manifest in the form of action. To realize an attitude into action, a supporting factor or an enabling condition is needed, such as facilities or infrastructure. After a person knows the stimulus or object, then makes an assessment or opinion on what is known, the next process is expected that he will carry out or practice what he knows or responds to (Notoatmodjo, 2012).

Based on the initial survey conducted, it is known that West Tanjungpinang District consists of 15 RW and 72 RT, with a total of 2,557 households. The interview was conducted to find out the level of knowledge of the community in West Tanjungpinang Village among 10 families, it was found that 20% of the people knew that mask waste management was carried out by cutting and changing from its original form, 40% of the people did not know how to properly dispose of mask waste, namely by how to wrap mask waste using plastic before throwing it in the trash.
Initial measurements of community attitudes are known to 60% of the community strongly

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agree that mask waste is medical waste while the rest disagree and assume that mask waste is a domestic waste. 40% of the community does not agree that mask waste and household waste are separated. 80% of the community strongly agrees that mask waste can cause environmental pollution and is reprimanded if someone throws away mask waste carelessly, 50% of the community does not agree if the mask waste is transported daily to a temporary collection point, and most of the community agrees that after handling or disposing of waste immediately wash hands with soap and running water. Based on this background, it is necessary to conduct research to determine the effect of knowledge and attitudes on the management of disposable mask waste in the community in West Tanjungpinang District.

2. Method

This study uses a quantitative descriptive method. The research population was 2,557 heads of families (KK). The research sample was taken by *random probability sampling*. The minimum number of samples required is calculated using the Slovin formula so that the minimum number of samples required is 346 households (KK). Data were analyzed univariately with a frequency distribution table and bivariate analysis using *the chi-square test*. *Chi-square* correlation analysis was used to determine the close relationship between two variables and to determine the direction of the relationship. If value Asymp.Sig <0.05, so there is a relationship which is significant Among the variable observed, and on the contrary, if score *Asymp.Sig* >0.05, so no there is a relationship that is significant Among the variable observed.

The initial hypothesis of this research is that there is an influence of knowledge and attitudes toward the management of disposable mask waste in the community in West Tanjungpinang District. If the p-value <0.05 then Ho is rejected (Ha is accepted) which means that there is an influence of knowledge and attitudes towards the management of disposable mask waste in the community in West Tanjungpinang District, and if the p-value > 0.05 then Ho is accepted

(Ha rejected) which means that there is no influence of knowledge and attitudes towards the management of disposable mask waste in the community in West Tanjungpinang District.

3. Result and Discussion

Based on the research that has been done to find out the effect of knowledge and attitudes on the management of disposable mask waste in the community in West Tanjungpinang District, then data collection related to community knowledge and attitudes about mask waste management was carried out. The results of data collection and processing can be seen in the following table:

Table. 1 Effect of Mask Waste Management on Knowledge

N o	Mask Waste Management	Knowledge			p value	QR
		Well (%)	Bad (%)	Total (%)		
1	Qualify	0.3	0	0.3	0.006	0.145
2	Not Eligible	11.6	88.2	99.7		

Based on table 1, it is known that most of the respondents (88.2%) have poor knowledge regarding the procedures for managing waste masks. Only 11.6% which capable answered the Correct amount of questions about management mask waste. Almost all respondents manage mask waste by the method which no Fulfill condition (99.7%), and only one person respondents with good knowledge of mask waste management (0.3%) who do management waste mask in the right way (fulfill condition).

Asymp Value. Sig. (2-sided) on the *Pearson Chisquare* of 0.006. The value is smaller than α which used (5%). It means Ho rejected and it can be concluded that there is sufficient evidence to state that there is a significant relationship between the way of mask waste management and the knowledge owned by respondents.

This research is in line with the results of research conducted by Fenia. L (2020) in the Work Area of the Sidomulyo Health Center Inpatient Pekanbaru City, the result of which is that there is a relationship between knowledge of mask waste management with

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p value = 0.01 < α = 0.1 . and supported by research conducted by Nurhayanti L (2016) in the Sukoharjo Hospital Inpatient Room, the results obtained that there was a relationship between attitude and medical waste management and it was not in line with Magdalena M (2013) research at the Kebumen District Hospital with the result that there was no relationship between attitude and medical waste management.

The number of categories for how to manage waste masks (2 categories) and knowledge (2 categories) same, so the strength connection is seen based on the contingency coefficient. The contingency coefficient value is 0.145. This means that there is a relationship between how to manage mask waste and knowledge very worth low however have a connection that is significant to statistics.

A person's knowledge of objects has different intensities or levels (Notoatmodjo, 2014). The knowledge factor about the management of mask waste before being disposed of at the TPS is very important for the public to know to prevent pollution. One of the efforts to increase public knowledge is by providing training or counseling as a means of providing education, especially to the general public about the importance of mask waste management so that they behave properly in disposing of mask waste in its place (Sholikhah, 2011).

The first step that needs to be done in waste management is to separate domestic waste from infectious waste. Domestic waste is household waste originating from daily activities in the household, which does not include feces and specific waste (Ministry of Health, 2013).

Disposable mask waste is included in domestic waste and it is recommended to disinfect it first by soaking it in a disinfectant/chlorine/bleach solution and then changing its shape such as breaking the string or tearing it. This is done to prevent reuse (Kemenkes RI, 2020).

There is a relationship between the management of mask waste and knowledge, it is necessary to have a good understanding of the importance of proper and correct

management of mask waste. Someone who understands properly and correctly about the management of domestic mask waste will be able to reduce mask waste as a source of the spread of the COVID-19 virus, reduce mask waste pollution in the community, and can minimize the misuse of mask waste. The management of mask waste is very close to the knowledge, which is marked by the better knowledge, the higher the behavior of mask waste management that has been recommended by the government according to the guidelines of the Ministry of Health (Kemenkes RI, 2020).

Table.2 The Effect of Mask Waste Management on Attitude

| No | Waste Management | Attitude | | | p value | QR |
		Well (%)	Bad (%)	Total (%)		
1	Strong	0.3	0	0.3	0.547	0.032
2	Very strong	73.1	26.6	99.7		

Based on table 2, it is known that around 73.3% of respondents have a strong attitude regarding the management of mask waste and 26% of respondents have a very strong attitude regarding the management of mask waste. Almost all respondents manage to mask waste by using the method which no Fulfill condition (99.7%), and only one person respondents with an attitude strong (0.3%) which To do management waste mask with a method that is appropriate (Fulfill condition). Asymp Value. Sig. (2-sided) on the Pearson Chisquare of 0.547. The value is bigger than which used (5%). It means Ho received and it can be concluded that there is not enough evidence to state that there is a significant relationship between the way masks are managed and attitude.

The number of categories for how to manage waste masks (2 categories) and attitudes (2 categories) is the same, so the strength of the relationship is seen based on the contingency coefficient. The contingency coefficient value is 0.032. This means that the relationship between the way of managing waste masks and attitudes is very low and does not have a statistically significant relationship.

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This research is in line with the results of research conducted by Nurhayanti L (2016) in the Sukoharjo Hospital Inpatient Room, the results obtained are there is a relationship between attitude and medical waste management and is supported by research by Maulana M. E (2020) at the Bumi Makmur Health Center. with medical waste management and is not in line with research by Magdalena M (2013) at the Kebumen District Hospital with the result that there is no relationship between attitude and medical waste management.

Attitude does not necessarily translate into action. So that a good thinking process supported by good knowledge will produce a good attitude. The best attitude is to be responsible for what he has believed (Fahiryah L, 2015).

There is a relationship between mask waste management and attitude, this is because the community is considered to have a strong attitude but not on the proper and correct management of mask waste, where most of the people studied do not meet the requirements for proper and correct mask waste management. The more positive the respondent's attitude about the management of mask waste to stop the spread of COVID-19, the higher the desire to manage mask waste properly and act quickly and appropriately, so that the negative impacts that can be generated from mask waste do not occur. To be able to act quickly and appropriately, people must have a positive attitude. Attitude is the readiness to respond positively or negatively to situations consistently. Attitude is a reaction to a situation that is relatively accompanied by certain feelings and provides the basis for the person to make a response or behavior in a certain way he chooses (Notoatmodjo, 2007).

Table. *3* Effect of Knowledge and Attitude on Mask Waste Management

No	Knowledge	Attitude			p value	QR
		Strong (%)	Very strong (%)	Total (%)		
1	Well	4.9	6.9	11.8		
2	Bad	68.5	19.7	88.2	0.001	0.256
	Total	73.4	26.6	100		

Based on table 3 obtained about 73.4% of respondents have an attitude that is strongly related to Knowledge and 26.6% of the respondent with an attitude strongly related to Knowledge before being dumped into the TPS. Most of the respondents (88.2%) had poor knowledge regarding the management of mask waste before being disposed of to the TPS, and only 11.8% of the respondents had good knowledge regarding the management of masks before being disposed to the TPS.

A respondent with an attitude which strong and very strong tends to have poor knowledge regarding the management of masks before disposal to TPS. 93.3% of respondents with a strong attitude were unable to answer with appropriate related how methods manage rubbish masks. Besides, In addition, 73.9% of respondents with a very strong attitude also have no knowledge of which good. Only around 1 from 4 have an attitude strong and can answer correctly regarding how to manage mask trash. Asymp Value. Sig. (2-sided) on the *Pearson Chi-square* of 0.00. The value is smaller than α which used (5%). It means Ho rejected and can be drawn a conclusion that enough proof to state that there is a significant positive relationship between knowledge and attitudes.

Amount category knowledge (2 categories) and attitude (2 categories) are the same, then the strength of the relationship is seen based on the contingency coefficient. The contingency coefficient value is 0.256. This means that the relationship between knowledge and attitudes is of low value and has significantly positive relationship statistics.

This study is in line with the results of research conducted by Fenia. L (2020) in the Work Area of the Sidomulyo Health Center Inpatient Pekanbaru City, the result of which is that there is a relationship between knowledge and attitudes towards mask waste management with p value = 0.01 < = 0.1 and is supported by Maulana ME's research (2020) at the Bumi Makmur Health Center showed that there was a

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relationship between knowledge and attitudes with medical waste management. Knowledge is the result of knowing, which occurs after people sense certain objects. Most of the knowledge is obtained from the eyes and ears. Knowledge is a guide in shaping one's actions (Notoatmodjo, 2012).

Knowledge also includes practice or technical ability in solving various life problems that have not been standardized in a systematic and methodical manner. After someone has knowledge about waste, then someone is required to gain knowledge and be able to answer correctly about how to manage mask waste. Good mask waste management is a series of activities that include collection, transportation, management, and disposal (Rizal, 2019).

The management of mask waste in the community has a strong attitude regarding knowledge and does not meet the requirements, this is because the community is not able to answer correctly regarding how to properly manage mask waste, therefore it is still necessary to promote health education to increase people's knowledge and attitudes towards waste management. masks properly. Research conducted by Wong Z (2020) stated that there was an increase in mask waste during the COVID-19 pandemic that was not managed properly and correctly.

The behavior of disposing of mask waste properly and correctly is not only from the infectious aspect but also one of the efforts to increase environmentally friendly behavior is the Adiwiyata program from the Ministry of the Environment, namely Environmental Regulation No. 02 of 2009. Environmentally friendly behavior is a behavior related to actions. someone who is shown repeatedly and tends to be continued due to the situations and conditions faced (Robbins & Judge, 2013).

It is important for the community to know and do the handling of household infectious waste to reduce the spread of the SARS-CoV (COVID-19) virus. Handling of waste from the source can be done with several steps that are easy to do by the general public, namely sorting, storing, and disinfecting, as well as labeling. Increased knowledge and public attitudes about handling household infectious waste, as well as capacity building and health and safety procedures for janitors. The stages of mask management among the community consist of collecting used masks, carrying out disinfection of used masks, changing the shape of masks by cutting or breaking them, throwing garbage into inorganic domestic trash, and washing hands with soap or hand sanitizer to avoid transmission. viruses and bacteria (Kemenkes RI, 2020).

4. Conclusion and Sugestion

Based on the results of the study, it can be concluded that there is a significant influence between the way of managing waste masks and the knowledge owned by the respondents, while the attitude aspect has a significant influence on how to manage mask waste and respondent's attitude and there is a significant influence between knowledge and attitude towards the way of managing waste masks. It is recommended for further research to analyze other aspects that influence people's behavior in managing mask waste.

5. Acknowledgements

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Wednesday, June 14, 2022

Publisher : Politeknik Kesehatan Kemenkes Semarang
2022

THE MANGROVE LEAVES POWDER AS A NATURAL PRESERVATIVE FOR "OTAK-OTAK"

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Abstract

Otak-otak is a perishable food that rots quickly. An alternative to extend the shelf life of raw *otak-otak* is using jeruju mangrove leaves as natural perservative. Mangrove jeruju contains antimicrobial substances that can inhibit microbial growth. The purpose of this study was determine the effect of the Jeruju mangrove leaf powder concentration to the raw *otak-otak's* shelf life. The research methode was an experiment with the Posttest Only Control Group Design. The concentration of jeruju mangrove leaf powder was 0%, 5%, 10% and 15%. Each concentration was applied to each of 100 gram raw *otak-otak*. Observation of the results were carried out by organoleptic tests (texture, color and smell), hedonic tests (taste). Data were analyzed bivariately. The results showed that *otak-otak* at a concentration of 5% had shelf life 22,33 hours, 10% had 25,33 hours and 15% had 28,68 hours. Based on the test results, there was a significant effect of the concentration of jeruju mangrove leaf powder on the shelf life of raw *otak-otak*. The concentration of jeruju mangrove leaf powder can increased the shelf life of raw *otak-otak*. For further researchers, is needed to find combination of the right ingredients to produce raw otak-otak with natural preservatives Jeruju mangrove leaf powder which is more special and delicious.

Keywords: natural preservative; *otak-otak ;* shelf life.

1. Introduction

Otak-otak is one of the typical foods in the Riau Archipelago Province. Otak-otak in the Riau Islands are usually made from fish or squid mixed with spices (coconut milk, salt, sugar, pepper, garlic, and shallot), then wrapped with coconut leaves and grilled. Riau Island has large sea area, producing sea food like fish and squid, main ingredient for otak-otak. Price of otak-otak is relatively affordable, can be consumed by all levels of society, and rich in protein and fat.

Based on the materials used, otak-otak can be a good medium for microbial growth, so otak-otak is one of the perishable food. It is necessary to protect *otak-otak* from damage or spoilage of microorganisms. It is necessary to make efforts to extend the shelf life of raw *otak-otak*. One way to prevent damage and extend the shelf life of the otak-otak is to use preservatives. Synthetic preservatives can be toxic are not recommended by the Badan Pemeriksaan Obat dan Makanan (BPOM) because they can cause cancer (carcinogen agents).

Based on observations of 2 (two) otak-otak traders in Tanjungpinang, it was known that otak-otak traders in Tanjungpinang still keep in refrigeration by putting the raw otak-otak into a cooling machine (refrigerator) which can preserve *otak-otak* for 2 until 3 days. *Otak-otak* food is a typical food and often used as souvenirs, the cooling method is felt to be less effective, it is necessary to have other methods of preservation that are more effective and make the food can be taken to other places in the long term, one of the natural preservatives that can be used is jeruju mangrove leaf powder.

Mangrove jeruju (*Acanthus ilicifolius*) is a type of mangrove that has many benefits, one of them as a natural food preservative. Jeruju mangrove leaves contain bioactive compounds that have the potential as antibacterial ingredients such as saponins, alkaloids, terpenoids, and tannins (Rosa and Maryani, 2020). Based on the results of research conducted by Jayadi et al. (2018), jeruju mangrove leaves could effectively inhibit bacterial growth at concentrations of 5%, 10% and 15% in chicken meatball products by processing them into flour first.

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Based on the above background, interested to research jeruju mangrove leaves as a natural preservative for *otak-otak*. The purpose of this study was to determine the effect of variations in concentration on the shelf life of raw *otak-otak*, with the specific aim of knowing the physical quality and shelf-life of raw otak-otak that have been treated which include color, texture, smell and taste, and knowing the level of preference (hedonic test).

2. Method

This research was an experimental research with a design *Posttest Only Control Group Design*. Variables of this study consisted of independent variables, dependent variables and confounding variables. The independent variable was the concentration of jeruju mangrove leaf powder. The powder was made by drying the leaves of mangrove jeruju in an oven at 48°C for 27 hours. Mangrove leaves are then crushed and sieved to produce a fine powder. The powder was then applied to the raw otak-otak by sprinkling it with different concentrations 0%, 5%, 10%, and 15%.

The dependent variable in this study was the shelf life of raw *otak-otak* after being treated. The treatment procedure was provided 12 containers containing 100 g of raw brain each, the first 3 containers were not treated, the second three containers were treated with 5% mangrove leaf powder, the third 3 containers were treated with 10%, while the fourth 3 containers were given 15% treatment. Applying of jeruju mangrove leaf powder was by covering *otak-otak* with powder and then stirring until evenly distributed. The treated *otak-otak* were stored in a closed container at room temperature and their shelf life was observed.

The shelf life of raw *otak-otak* is known through physical quality observations. Physical quality observations were carried out every 5 hours for 10 hours, after 10 hours, observations were made every 2 hours. This observation was carried out to see the state of the *otak-otak* including the color, smell and texture of the raw *otak-otak*. The results of the observations are recorded on the observation sheet. Confounding variables in this study were salt, turmeric, temperature. This variable is considered to interfere with the shelf life results. This variable was measured, but had not been studied further.

Observations of the preference test were carried out on the otak-otak with the longest shelf life. Observations were obtained after observing 25 respondents. The data analysis of this research is univariate and bivariate analysis. Bivariate analysis using one way ANOVA test.

3. Result and Discussion

1. Physical quality of the *otak-otak*

Physical features of the *otak-otak* were first observed in the raw otak-otak that had just been treated. Parameters observed in the form of color, texture and smell. observations are presented on table 1

Table 1. Physical features of the *otak-otak* in variation consentrations

| Var.Cons | Physical features of the otak-otak | | |
	Color	Texture	Smell
0%	Orange	Soft	Smell spices
5%	Light green	Soft	Smell spices
10%	Light green	Soft	Smell spices
15%	Dark green	Soft	Smell spices and smell like leaves

Raw otak-otak which were added with jeruju mangrove leaf powder had changed in color and smell, but did not change the texture. The green color of the raw otak-otak is influenced by the jeruju mangrove leaf powder, the more concentration given, the more changes in the color and smell of the raw otak-otak will be made. This physical quality will be a determining parameter on the shelf life of the raw *otak-otak*.

2. Shelf life of raw otak-otak

The observation of raw *otak-otak*' shelf life was based on the physical quality of the otak-otak until the otak-otak were damaged (stale). Otak-otak is a food that is high in protein, the best medium for the growth of spoilage bacteria which causes low shelf life. Good raw *otak-otak* had a fresh, normal smell and taste, orange in color, and not slimy in texture. Otak-otak that had been damaged are characterized by changes in the texture to become sticky and slimy and moldy and smells sour. The results of the one way ANOVA test, the effect of variations in the concentration of mangrove leaf powder on the shelf life of otak-otak can be seen in Table 2.

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Table 2. The effect of variations in the concentration of mangrove leaf powder on the shelf life of otak-otak

Var. Cons.	N	Mean	Std. Deviation	F (Anno va)	Sig.
5%	3	22.33	0.577		
10%	3	25.33	0.577	90.33	0.000*
15%	3	28.67	0.577		

Based on the results of the one way ANOVA test, it was found that the value of sig. is 0.000 this means that the p value <0.05 then H1 fails to be rejected which proves that there is an effect of variations in the concentration of jeruju mangrove leaf powder on the shelf life of the *otak-otak*. *Otak-otak* with the addition of 15% concentration of jeruju mangrove leaf powder had the longest shelf life of 28.67 hours on average. It was known that the average shelf life for the control (0% treatment) 16 hours at room temperature, so there was an additional shelf life of 12.67 hours at room temperature.

Observation of the shelf life of the raw *otak-otak* was carried out by direct observation to determine when the raw *otak-otak* were damaged between the raw *otak-otak* that were not treated and the raw *otak-otak* that were treated with jeruju mangrove leaf powder at each concentration with the observed parameters including smell, color and texture. Based on observations that have been made raw *otak-otak* without treatment have the longest shelf life of 16 hours at room temperature.

The results showed that raw *otak-otak* which was given concentration treatment with different variations experienced an increase in shelf life. The raw otak-otak had the longest shelf life at a concentration of 15% with an average shelf life of 28.67 hours. The raw otak-otak with 10% concentration treatment had an average shelf life of 25.33 hours and the raw otak-otak with 5% concentration treatment had an average shelf life of 22.33 hours.

Addition of jeruju mangrove leaf powder can increase the shelf life of raw *otak-otak* because the jeruju has antibacterial substances that can inhibit microbial growth. Based on research by Johannes and Sri Suhadiyah (2016), jeruju leaf extract contain flavonoid compounds, polyvenols and coumarins. In addition, jeruju mangrove leaves also contain bioactive compounds that have the potential as antibacterial ingredients such as saponins, alkaloids, terpenoids, and tannins (Rosa and Maryani, 2020). So this compound can be used as a natural preservative. This is supported by the results of research conducted by Jayadi et al. (2018), mangrove jeruju leaves could effectively inhibit bacterial growth at concentrations of 5%, 10% and 15% in chicken meatball products.

3. Hedonic Test Otak-otak with Mangrove Leaves Jeruju Preservative.

Hedonic test was done to determine the respondent's level of preference for the treated otak-otak samples. This test was carried out on the otak-otak with the best concentration, 15%. The otak-otak were grilled first and then tested on 25 respondents. The parameters tested were aroma, taste, color and texture. The results of the hedonic test on the otak-otak can be seen in Figure 1.
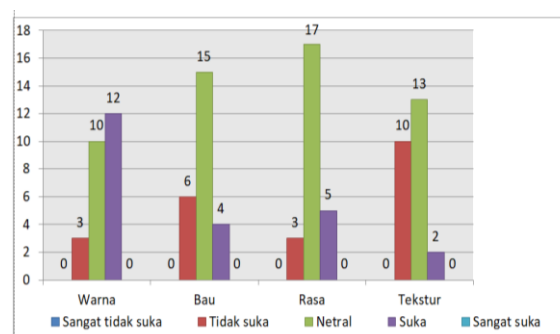
Figure 1. *Graph of the hedonic test otak-otak with a concentration of 15% jeruju mangrove leaf powder*

Respondents' preferences for mangrove jeruju was varied. Most showed a preference for the color of the otak-otak being green, but only a few liked the smell, taste and texture. This may be because the addition of mangrove leaves makes the texture harder after being burned, the smell of spices is reduced, there is a fresh leaf smell, and the taste becomes a bit musty. There needs to be further research to combine ingredients of otak-otak, so that this natural preservative can be used and produce otak-otak that are more distinctive and delicious.

4. **Conclusion and Suggestion**

Based on this study, it can be concluded that the variation in the concentration of the leaf powder of Mangrove jeruju has a significant effect on increasing the shelf life of *the otak-otak*, but the physical quality and preference test

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showed changes in color, taste, texture and smell, so further research is needed to find out combination of the right ingredients to produce otak-otak with natural preservatives Jeruju mangrove leaf powder which is more distinctive and delicious.

5. Acknowledgments

The authors would like to thank the Director of Health Polytechnic of Tanjungpinang, PPPM Tanjungpinang Health Polytechnic. PUI Sheen. Appreciation is addressed to all of the team in this research.

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THE EFFECT OF WARM COMPRESSES ON DYSMENORRHEA IN ADOLESCENTS AT MADRASAH ALIYAH NEGERI (MAN) 1 PEKALONGAN

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Abstract

Background. Dysmenorrhea is pain that occurs before and during menstruation which is characterized by cramping or discomfort in the lower abdomen. Dysmenorrhea in Indonesia is estimated at 55% experienced by women of productive age and 60-85% experienced by adolescents. 90% of Madrasah Aliyah Negeri 1 students in Pekalongan City experience dysmenorrhea with an age range of 17-18 years. Most of the students did not understand about the menstrual cycle, dysmenorrhea and handling of dysmenorrhea. The non-pharmacological pain management for dysmenorrhea is a warm compress, because it can increase blood flow and muscle relaxation. **Purpose**: This study aims to determine the difference in menstrual pain before and after a warm compress. **Method**: The research method used a pre-experimental design (one group with pre-post-test design). A sample of 30 are students of MAN 1 Pekalongan City. Sampling technique with purposive sampling. Pain assessment using a numeric rating scale. The pain scale was measured before and after the warm compress intervention. Warm compresses using a bottle filled with water with a temperature of 45-600C and compressed on the lower abdomen for 15-30 minutes. An explanation or education of the warm compress procedure is carried out before the collection process. The research team provided online assistance to respondents through chat or video calls. The method of data collection was done by using a google form which was filled in according to the menstrual period of each respondent. **Results**: Characteristics of respondents obtained age 17 years 76.7%; age of menarche 13 years 36.7%; experience dysmenorrhea 90% experienced in the first day; experience of handling dysmenorrhea 26.7% mostly by drinking herbal medicine. Different test of pain scale pre-test and post-test using Wilcoxon found a significant difference with p value = 0.001. **Conclusion**: Warm compresses can reduce menstrual pain in adolescence.

Keywords: menstrual pain, dysmenorrhea, adolescents, warm compress

1   Introduction

According to WHO, adolescence is a period of transition from childhood to adulthood, starting from the age of 12-24 years and according to the Indonesian Ministry of Health, the adolescent age ranges from 10-19 years (unmarried). Adolescence is a period of physical, psychosocial, intellectual/cognitive, moral and spiritual growth (One of the physical changes in adolescent girls is that they will experience an increase in hormone levels which can lead to maturation of the breasts, ovaries, uterus and vagina and will experience menstruation or menstruation

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(Kumalasari). et al, 2012). Menstruation begins between the ages of 12-15 years and lasts until the age of 45-50 years. Complaints that often arise during menstruation are irritability, restlessness, likes to sleep, enlarged breast concentration and dysmenorrhea.

Dysmenorrhea is pain that occurs before and during menstruation which is characterized by cramping or discomfort in the lower abdomen (Simanjuntak, 2008). Primary dysmenorrhea is menstrual pain without significant genetic abnormalities (pain that radiates from the lower abdomen to the waist and thighs can even be followed by nausea, vomiting, headache, and diarrhea), while secondary dysmenorrhea is pain that can be identified as a gynecological disorder.
. The incidence of menstrual pain (dysmenorrhea) in the world is very large, on average more than 50% of women in every country experience dysmenorrhea. In America the percentage is around 60% and in Sweden it is around 72%. Meanwhile, in Indonesia, it is estimated that 55% of women of reproductive age are tormented by pain during menstruation. For the incidence of dysmenorrhea in Madrasah Aliyah Negeri (MAN) 1 Pekalongan City students with an age range of 17-18 years, the majority experience dysmenorrhea. Although

generally harmless, it is often considered disturbing for women who experience it (Atikah, 2009). For the degree of pain and the level of disturbance is certainly not the same for every woman. Some are still able to work (occasionally while grimacing), some are unable to be active because of the pain (Proverawati & Misaroh 2009).

Giving warm compresses uses the principle of heating through the method of consumption, namely by attaching a bottle containing warm water to the stomach so that heat transfer will occur from the bottle into the stomach, so that it will reduce pain in women with dysmenorrhea who experience uterine contractions and smooth muscle contractions (Anugraheni & Wahunningsih). , 2013). This warm compress is very effective in reducing menstrual pain (dysmenorrhea) or muscle spasms. This increase in temperature can dilate blood vessels and increase blood flow.

2 Method

This study used a pre-experimental design (one group with pre-post-test design) which was conducted from September to November 2021. The study population was students of MAN 1 Pekalongan City. Inclusion criteria were adolescents who had primary

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dysmenorrhea (never been diagnosed with gynecological disease) in the last three months in a row and in the age range of 16 to 18 years.Based on the calculation of the sample according to Lemeshow (1997) so that a total of 30 research respondents were obtained. The sampling technique used purposive sampling. Data was collected using an online questionnaire or google form and pain scale using the Numeric Rating Scale (0 = no pain; 1-3 = mild pain; 4-6 = moderate pain; 7-9 = severe pain; 10 = very severe pain). . Respondents were taught pain assessment procedures and warm compresses so that respondents could practice warm compresses correctly at home according to the period of menstrual pain felt. The research team provides online assistance, both chat and video calls, whenever the respondent needs it. Respondents can contact the research team to ask for information or consultation on all matters related to research, especially pain assessment procedures and warm compresses. The warm compress treatment was carried out 1-3 times and immediately evaluated by assessing the post-test pain scale. Measurements were only carried out twice, namely before the warm compress and immediately after the warm compress.

Statistical analysis used statistical package for social sciences (SPSS) version 21. Characteristics of respondents were analyzed descriptively. Comparative test of pre-test and post-test data using paired t-test and Wilcoxon.

3 Results and Discussion

Characteristics of respondents consist of age, age of menarche, experience of dysmenorrhea and experience of handling dysmenorrhea.

Table 1. Characteristics of adolescent respondents in MAN 1 Pekalongan (n=30)

Characteristics of respondents		f	%
Age	16	4	13
	17	2	.3
	18	3	76
	Total	3	.7
		3 0	10 .0
			10 0
Age of Menarche	11	3	10
	12	9	.0
	13	1	30
	14	1	.0
	Total	7 3 0	36 .7 23 .3 10 0
Dysmenorrhea Experience	Day 1	2 7	90 .0
	Day 2		
	During	1 2	3. 3

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	n	%
menstrual period	3	6.7
	30	
Total		100
Experience in handling dysmenorrhea		
warm compress	7	23.3
Eucalyptus oil	4	13.3
Rest, sleep	6	20.0
Drink herbs	8	26.7
Drink a lot of water	4	13.3
Lots of activity	1	3.3
Total	30	

Table 1 shows the characteristics of respondents based on age, age of menarche, experience of dysmenorrhea and experience of handling dysmenorrhea (menstrual pain). Respondents based on age 76.7% are at the age of 17 years; the highest age of menarche was at the age of 13 years, which was 36.7%; Respondents usually experience menstrual pain on the first day, which is 90.0% and the treatment for dysmenorrhea which is often done is drinking herbal medicine by 26.7%.

Paired Group Difference Test

Table 2. Differences in pain scale before and after treatment at MAN 1 Pekalongan in 2021 (n=30)

	Pre test	*Post test*	*Z*	*p*
	Median (max – min value)	Median (max – min value)		
Pain scale	4.00 (0 – 7)	1.00 (0 – 5)	-4,73	0.0015

Description: n: sample; p: significance; (*) $p < 0.05$: significant difference; analyzed by Wilcoxon's difference test

Table 2 shows the pain scale before and after the intervention, namely the warm compress experienced a significant decrease, seen from the p value <0.05, which means that there was a significant decrease in the pain scale after receiving non-pharmacological pain management treatment with warm compresses.

The respondent's mean pre-test pain was 4. Pain scale 4 was classified as moderate pain which was described objectively as someone hissing, grinning, being able to

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pinpoint the location of pain, being able to describe pain and being able to follow commands well. The pain scale is an indicator of the level of pain that each person describes. Because pain is generally an unpleasant subjective emotional experience, adolescents can experience dysmenorrhea pain on a different scale (from mild to severe and unbearable pain).

If it is associated with the process of growth and development experienced by adolescents, especially the emotional development that occurs can affect adolescents in interpreting the menstrual pain they experience. The emotional development experienced by adolescents is the presence of emotions that are more volatile and are usually expressed with outbursts and the types of emotions that are more varied. Unstable emotional conditions will make a person more sensitive to pain and lower the pain threshold, for example, someone will be more stimulated or have difficulty controlling emotions and take actions that are detrimental to themselves and even others. Therefore, it is undeniable that most of the teenagers revealed that when they experience menstrual pain, they often choose to reduce their activities and rest more.

In addition to emotional conditions, knowledge about menstrual pain and menstruation also has a significant correlation with the way adolescents describe menstrual pain. The more or longer menstrual periods experienced by adolescents, this is associated with the age of menarche (first menstruation), the better the understanding of menstrual pain. In other words, the more experience in experiencing menstrual pain, the better knowledge or understanding of menstrual pain will be. In this study, the age of menarche in MAN 1 Pekalongan adolescents was more at the age of 12 and 13 years, while the average age of the respondents was 17 years. This shows that the menstrual period experienced by most respondents is 4 years. This means that in a period of 4 years the respondents indicated that the menstrual pain they felt was moderate pain.

The findings in this study indicate that there is a significant difference in the average menstrual pain before the warm compress is applied and after the intervention. The warm compress method used in this study was adopted from several previous studies, namely using warm water with a temperature range of 45-600C filled in a plastic bottle or glass bottle and compressed for 15-30 minutes. Water temperature is measured

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with a water thermometer. Factors that affect menstrual pain such as age, age at menarche, experience of menstrual pain and experience of handling menstrual pain are external factors that were not analyzed in this study. So the results in this study only saw the difference in the average pain scale before and after the intervention (warm compresses).

Warm compresses are effective in reducing the pain scale of dysmenorrhea compared to the use of lavender aromatherapy (Yunianingrum & Widyastuti, 2018). Warm compresses provide heat that can cause dilation of blood vessels so as to improve blood circulation, relieve ischemia in myometrial cells, reduce myometrial muscle contractions and increase muscle relaxation so as to reduce pain due to spasm or irritation. In addition, a warm compress will stimulate large diameter nerve fibers causing the stimulus not to be conveyed to the spinal cord (cannot be transmitted to the brain stem and thalamus/cortex) and not interpreted as pain.

In study Nurafifah, Mauliyah, & Impartina (2020) warm compresses can reduce pain scale in 93.3% of adolescents aged < 20 years compared to groups of adolescents of the same age who do not receive warm compresses. The warm compress carried out in this study used warm water with a temperature of 40-45^0C in a bottle and was compressed for 10 minutes in the lower abdomen. Heat can cause vasodilation of blood vessels, increasing the flow of blood and oxygen, nutrients, and other blood cells to body tissues (Lilis & Lyn in 1995) Nurafifah et al., 2020).

A warm compress is one of the non-pharmacological pain management measures that can be done independently at home. All respondents answered that they did not find any problems in applying warm compresses. They say warm compresses are a practical and inexpensive procedure that can be done at home. The warm compress therapy procedure is also easy to teach to others. After knowing and understanding that warm compresses can reduce menstrual pain, the respondents think that in the future warm compresses will be the first choice of action to relieve menstrual pain that they will do.

Based on the results of the study, 23.3% of respondents had done warm compresses and made it the most frequent action when experiencing menstrual pain. Treatment actions (warm compresses) that have been carried out or repeated often indicate that

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the benefits of these actions have been proven to solve the problem. This is one thing that makes it easy for researchers to teach warm compress procedures to respondents. The researcher's way of ascertaining whether the procedure being practiced is correct is by asking for documentation when the respondent applies a warm compress in the form of an image/photo.

Warm compresses carried out by respondents at most were 1 treatment and immediately got the benefits. Only 6 respondents who do warm compresses more than 1 time. However, the researchers did not analyze to what extent or which is the most effective in practicing warm compresses. Therefore, further studies are needed to see the effectiveness of warm compresses that are carried out many times during 1 period of menstrual pain.

4   Conclusion and Sugestion

There is a significant difference between the menstrual pain scale before and after the intervention of warm compress therapy in female students of MAN 1 Pekalongan. That is, warm compresses can significantly reduce menstrual pain in adolescents. Further study is needed to measure the effect of compress therapy warm in the early adolescent age group or just experiencing menarche.

5   Acknowledgements

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Smoking Behavior of Adolescents in Public High Schools in Bantaeng District, South Sulawesi, Indonesia

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Abstract

The most at risk in adolescents is smoking which can be related to smoking behavior in students such as there are several factors behind adolescents becoming smokers, including knowledge, attitudes and environment this study used the Chi Square statistical test which aims to determine the factors related to smoking behavior in students of SMAN 6 Bantaeng. This type of research was observational with the cross *sectional* analytical study approach. The study population was class XI and XII students at SMAN 6 Bantaeng with a sample of 35 respondents selected using *purposive sampling*. Data collection was carried out by the method of using questionnaires. In the research test, the environmental variable obtained a p value = 0.002 smaller than the value of α = 0.05 so it can be said that there is a relationship between the environment and smoking behavior. From the results of the study, this research was used as input to nurses and other health workers the importance of providing information and counseling to respondents about smoking so that respondents could determine a good attitude towards their smoking behavior in order to provide input for the school to better control students not to smoke. It is necessary to impose smoking ban regulations in the school environment and impose sanctions on students who are branded.

Keywords: Knowledge, attitudes, environment, smoking behavior, Student.

Background

In the midst of the competition for the development of a modern and luxurious lifestyle as it is today, one of the groups that are vulnerable to being carried away by the developmental current itself is adolescents. Adolescence is a transition period from childhood to adulthood so that adolescents experience many changes, both physically and psychically (Balan, Widodo & Lasri, 2018). In 2016 about 1.2 billion adolescents aged 10-19 years made up 16% of the world's population. More than half of the world's adolescents are in Asia with the highest number in South Asia at around 340 million followed by East Asia and the Pacific at around 277 million (Unicef, 2019).

In this era of globalization, adolescence is an age that is widely required to get to know various new things. This new thing can be obtained from the surrounding environment. Smoking is one of the habits that are becoming a common phenomenon among adolescents today. A number of studies have found smoking first begins at the age of 11-13, and this is preceded by curiosity. The increase in smoking behavior has an impact on the increasing burden of diseases caused by cigarettes and the increase in mortality, it is estimated that the mortality rate from cigarettes will reach 70% by 2030 and

half of it has an impact on the productive age population. In 2016 the number of smokers aged 15 years and over in the world was 19.9% with the highest prevalence in male smokers, namely 33.7% and in female smokers, which was 6.2% (WHO, 2019).

Based on data obtained from the world Health Organization (WHO, 2021), Europe is the continent with the highest smoking prevalence in adolescents aged 15 years and over, namely 29.4%, followed by the State of the Southwest Pacific region which is 24.5%, then Southeast Asia and America which is 16.9%, followed by Africa and others.

Based on data from the Wworld Health Organization (WHO, 2014), there are six million cases of death each year estimated to be due to cigarettes worldwide. In 2014, Indonesia itself ranked fourth as the country with the most cigarette consumers after China, Russia and the United States with estimated 1,000-1,499 cigarettes consumed by people over the age of 15 years each year with a total of 34.8% who smoked. Data obtained from (Ministry of Health, 2016), the prevalence of smoking in Indonesia has increased from 27% in 1995 to 36% in 2013 with the prevalence of smoking adolescents aged 16-19 years died 3 times from 7.1% (1995) to 20.5% (2014). In 2013, the average

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number of cigarettes smoked per day was 12.3 cigarettes (equivalent to one pack). The largest proportion of daily active smokers is the productive age group (25-64 years) with a range of 30.7%. 32.2% and there was an increase in the proportion of smokers aged ≥10 years (36.3%) (Ministry of Health, 2013).

The results of the Basic Health Research (Riskesdas, 2013), show that nationally the percentage of the population aged > 15 years who smoke is 33.6%, which consists of 28.2% of daily smokers and 5.4% of occasional smokers. The proportion of the population aged 10-14 years who smoke is 1.4% which consists of 0.5% of daily smokers and 0.9% of occasional smokers. Meanwhile, the proportion of smokers aged 15-19 years is 18.3% which consists of 11.2% of daily smokers and 7.1% of occasional smokers. This condition shows that the average Indonesian population has smoked cigarettes at a young age (Ministry of Health RI, 2010).

Results from Basic Health Research (Riskesdas, 2010), South Sulawesi Province is a province with a fairly high smoking prevalence in Indonesia (31.6%) equal to the prevalence in Yogyakarta (31.6%) and cigarette use according to (Riskesdas) in men reaches (65.9%) while women (4.2%). Smoking is more in high school teenagers, in teenagers who live in villages than in cities, as well as in lower economies.

In addition, data from Riskesdas (2010) the prevalence of South Sulawesi residents who smoke in the age group of 45-54 years is 32.2%. Meanwhile, in the male population aged 15 years and over, 54.1% were smokers. The highest prevalence of smoking was first at the age of 15-19 years (43.3%) and by 1.7% of the population began to smoke for the first time at the age of 5-9 years (Qadafi, Fajriansi & Darwis, 2014). In Makassar, around 62.5% obtained information on adolescents with attitudes that tend to be negative towards cigarettes has a significant relationship with smoking behavior (Alamsyah & Nopianto, 2017). Bantaeng Regency is one of the areas with the highest prevalence of smoking in adolescents (66.4%) namely aged 10-12 years (2.3%), aged 13-15 years (20.0%), aged 16-18 years (62.4%) while aged 19-24 years (83.5%) (Balitbangkes, 2016).

Cigarettes are known to contain more than 4000 substances/chemicals that are harmful to health, of which 43 substances are carcinogenic.

Its main components are nicotine, a dangerous substance that causes addiction; tar which is carcinogenic, and CO that can lower the oxygen content in the blood. Cigarettes are a risk factor for the emergence of non-communicable and deadly diseases, such as coronary heart disease, stroke, and cancer. In addition to threatening the health of smokers, cigarette smoke is also harmful to people around who are exposed to cigarette smoke. The higher the level of harmful materials in a cigarette, the more likely it is to suffer from these diseases in the future (Center for Health Protocols of the Ministry of Health of the Republic of Indonesia, 2013).

Many studies have proven that smoking can have adverse effects on health, including it can cause heart disease, lung disease, lung cancer and other cancers, diabetes, impotence, causing blindness, oral diseases, and fetal disorders (Baharuddin, 2017: Oktaviani, Avianty, & Mawati, 2021) . Although smoking has many bad / negative effects, smoking also has some positive impacts. The positive impact of smoking is to reduce stress, cause a sense of favor and strengthen associations between friends (Wati, Bahtiar & Anggraini, 2018).

In the research of Ahmad Rifai (2017), there are several reasons for adolescents to start smoking because of various things, including imitating adults, seeing people older than them smoking makes teenagers affected and want to do similar things so that it becomes a habit that is difficult to get rid of. The family problems of a teenager whose family conditions are not good then tend to stress thinking about it, peers in the environment have a big influence on a teenager who has not smoked, because friends will always influence to smoke because usually if they don't smoke someone is considered unmanly or timid. After teenagers start smoking, they always feel addicted to continuing the habit so it is difficult to stop it.

Method

This study uses an observational type of research with a *cross-sectional* analytical study approach that aims to determine the factors that influence smoking behavior in adolescents (Sugiyono, 2013). The sample is part of the population studied (Nursalam, 2017). According to *Gay*, the minimum acceptable sample size is based on the research design used. The sample

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size in the experimental method, at least 15 subjects per group (Sugiyono, 2009; Hidayat, 2018) tag. The sample in this study was 67 students from classes X and XI at SMAN 6 Bantaeng.

In this study, researchers used *purposive sampling* which is a technique for determining samples with certain considerations (Sugiyono, 2017). The reason for selecting samples using *Purposive sampling* is because not all samples have criteria according to what the author has determined. Therefore, the selected sample is deliberately determined based on certain criteria that have been determined by the author in order to obtain a representative sample.

In this study, the instrument used was in the form of a questionnaire. The questionnaire was made by the researcher himself with adopters from (Nursalam, 2017) and previous researchers consisting of:

a. Demographic data on the characteristics of smoker students, namely name, age, and class.

b. The second questionnaire is a questionnaire on the knowledge of smoker students consisting of 10 questions related to smoking behavior. In this study, knowledge measurement used the Guttmann scale with category 2 = Yes, 1 = No (for positive questions) and the opposite category for negative questions.

c. The third questionnaire is a questionnaire on the attitudes of smoker students consisting of 10 questions related to smoking behavior. In this study, attitude measurement used the Liker scale with categories 4 = SS, 3 = S, 2 = TS, and 1 = STS (for positive questions) and the opposite category for negative questions.

d. The fourth questionnaire is a questionnaire on the environment of smoker students consisting of 12 questions related to smoking behavior. In this study, environmental measurements used the Guttmann scale with categories 4 = SS, 3 = S, 2 = TS, and 1 = STS (for positive questions) and the reverse category for negative questions.

e. The first questionnaire is a questionnaire on smoking behavior consisting of 10 questions related to smoking behavior. In this study, smoking behavior measurements used the Guttmann scale with categories 2 = Yes, 1 = No (for positive questions) and the opposite category for negative questions.

Result

This research was carried out at SMAN 6 Bantaeng from July 29 to August 2, primary data collection based on questionnaire sheets for all students who were male in class XI and XII.This study used the *Chi Square* statistical test which aimed to determine the factors related to smoking behavior in students of SMAN 6 Bantaeng. Data collection was carried out on May 22, 2021 with a total of 35 respondents using *purposive sampling* techniques. The results of this study were obtained from primary data, namely by using questionnaires.

After data collection, the researcher then carried out data processing with several stages, including *Editing*, namely the questionnaire was checked again for completeness to avoid errors that had an impact on the possibility of biased data, *coding*, namely providing code on the questionnaire to facilitate data input, then conducting data *entry* with the help of the SPSS system and the final stage of *tabulation* data to be easily analyzed so that it can conclude or find out whether there is a relationship between independent and dependent *variables using the Chi-Square Tests* test with a significance level $p < \alpha = 0.05$.

1. Characteristics of Respondents

a. Age

Table 5.1
Frequency Distribution of Respondents by Age at SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Age	n	%
15	4	11,4
16	13	37,1
17	15	42,9
18	3	8,6

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Total	35	100

Source: Primary Data July 2021

Based on table 5.1, it shows that of the 35 respondents at SMAN 6 Bantaeng with the highest number of respondents, there were 17 respondents aged 17 years, namely 15 respondents (42.9%), 16 years as many as 13 respondents (37.1%), 15 years old as many as 4 respondents (11.4%) and 18-year-old respondents as many as 3 respondents (8.6%).

b. Classes

Table 5.2
Frequency Distribution of Respondents by Class at SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Class	n	%
XI IPA	8	22,9
XI IPS	12	34,3
XII IPA	5	14,3
XII IPS	10	28,6
Total	35	100

Source : Primary Data July 2021

Based on Table 5.2, it shows that of the 35 respondents at SMAN 6 Bantaeng with the highest number of respondents, there are class XI social studies, namely 12 students (34.3%), class XII social studies respondents, namely 10 students (28.6%), class XI science respondents, namely 8 students (22.9%) while class XII science respondents are 5 students (14.3%).

2. Univariate Analysis
  a. Knowledge

Table 5.3
Frequency Distribution of Respondents based on Student Knowledge at SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Knowledge	n	%
Good	33	94.3
Less	2	5.7
Total	35	100

Source: Primary Data July 2021

Based on Table 5.3, it shows that of the 35 respondents at SMAN 6 Bantaeng with the highest number of respondents, they were those with good knowledge, namely 33 respondents (94.3%), while respondents who had less knowledge were 2 respondents (5.7%).

b. Attitude

Table 5.4
Frequency Distribution of Respondents based on Student Attitudes at SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Attitude	n	%
Good	26	74,3
Bad	9	25,7
Total	35	100

Source: Primary Data July 2021

Based on Table 5.4, it shows that of the 35 respondents at SMAN 6 Bantaeng with the highest number of respondents, they were those with good attitudes, namely 26 students (74.3%), while respondents who had bad attitudes were 9 students (25.7%).

c. Environment

Table 5.5
Frequency Distribution of Respondents based on Student Environment at SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Milieu	n	%
Good	16	45,7
Bad	19	54,3
Total	35	100

Source: Primary Data July 2021

Based on Table 5.5, it shows that of the 35 respondents at SMAN 6 Bantaeng with the highest number of respondents, they were those with a bad environment, namely 19 students (54.3%), while respondents who had a good environment were 16 students (45.7%).

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d. Smoking Behavior

Table 5.6
Frequency Distribution of Respondents based on Student Smoking Behavior at SMAN 6 Bantaeng, Bonto Tallasa Village', Ulu ere District, Bantaeng Regency in 2021

Milieu	n	%
Positive	23	65,7
Negative	12	34,3
Total	35	100

Source: Primary Data July 2021

Based on Table 5.6, it shows that of the 35 respondents at SMAN 6 Bantaeng with the highest number of respondents, there were positive smoking behaviors, namely 23 students (65.7%), while respondents with negative smoking behaviors were 12 students (34.3%).

1. Bivariate Analysis
   a. Relationship of Student Knowledge to Smoking Behavior

Table 5.7
The Relationship of Knowledge with Smoking Behavior at SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Pengetahaun	Smoking Behavior				Total		P Value
	Positive		Negative				
	n	%	n	%	n	%	
Good	22	62,9	11	31,4	33	94,3	
Less	1	2,9	1	2,9	2	5,7	
Total	23	65,7	12	34,3	35	100	

Primary Data Sources July 2021

Based on table 5.7, the results of the analysis of the relationship between knowledge and smoking behavior obtained that out of 35 students there were 33 respondents (94.3%), who were well informed with positive smoking behavior as many as 22 respondents (62.9%) and negative smoking behavior as many as 11 respondents (31.4%).

Meanwhile, those who were poorly informed were 2 respondents (5.7%) with positive smoking behavior and negative smoking behavior as much as 1 (2.9%). The results of the *Chi-Square Tests* statistical test obtained a value of p = 1,000 where p > α (alpha = 0.05), it can be concluded that there is no significant relationship between attitudes and smoking behavior in class XI and XII students at SMAN 6 Bantaeng.

b. Relationship of Student Attitudes with Smoking Behavior

Table 5.8
The Relationship between Attitudes and Smoking Behavior at SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Attitude	Smoking Behavior				Total		P Value
	Positive		Negative				
	n	%	n	%	n	%	
Good	18	51,4	8	22,9	26	74,3	0,685
Bad	5	14,3	4	11,4	9	25,7	
Total	23	65,7	12	34,3	35	100	

Primary Data Sources July 2021

Based on table 5.7, the results of the analysis of the relationship between attitudes and smoking behavior obtained that out of 35 students there were 26 respondents (74.3%) who behaved well with positive smoking behavior as many as 18 respondents (51.4%) and negative smoking behaviors as many as 8 respondents (22.9%). Meanwhile, those who behaved badly were 9 respondents (25.7%) with positive smoking behaviors as many as 5 (14.3%) and negative smoking behaviors as many as 4 (11.4%). The

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results of the *Chi-Square Tests* statistical test obtained a p value = 0.685 where p > α (alpha = 0.05), it can be concluded that there is no significant relationship between attitudes and smoking behavior in class XI and XII students at SMAN 6 Bantaeng.

c. The Relationship of the Student Environment with Smoking Behavior

Table 5.9

The Relationship of The Environment with Smoking Behavior di SMAN 6 Bantaeng, Bonto Tallasa Village', Uluere District, Bantaeng Regency in 2021

Milieu	Smoking Behavior				Total		P Value
	Positive		Negative				
	n	%	n	%	n	%	
Good	15	42,9	1	2,9	16	45,7	
Bad	8	22,9	11	31,4	19	54,3	0,002
Total	23	65,7	12	34,3	35	100	

Primary Data Sources July 2021

Based on table 5.7, the results of the analysis of the relationship between the environment and smoking behavior obtained that out of 35 students there were 16 respondents (45.7%) who had a good environment with positive smoking behavior as many as 15 respondents (42.9%) and negative smoking behavior as many as 1 respondent (2.9%). Meanwhile, those with a bad environment were 19 respondents (54.3%) with positive smoking behaviors of 8 (22.9%) and negative smoking behaviors of 11 (31.4%). The results of the statistical test with the *Chi-Square Tests* test obtained a value of

p = 0.002 where p > α (alpha = 0.05), it can be concluded that there is a significant relationship between the environment and smoking behavior in class XI and XII students at SMAN 6 Bantaeng.

Discussion

This research was conducted by collecting primary data using questionnaires; in addition, secondary data was taken from schools that supported this study by looking at the number of male students in class XI and XII at SMAN 6 Bantaeng Kec. Uluere, Bantaeng Regency. This study aims to see factors related to smoking behavior in students of SMAN 6 Bantaeng. After that, data processing and data analysis will be discussed as follows:

1. Relationship of Knowledge about Smoking Behavior

Based on the results of research with *the Chi-Square Tests* test shown in Table 5.7, it is known that the p value = 1,000 and the value of α = 0.05, which shows p > 0.05 which means ha rejected and ho received which has no significant relationship between knowledge and smoking behavior in students at SMAN 6 Bantaeng, so it can be concluded that the hypothesis that states there is a significant relationship between knowledge and behavior smoking in students at SMAN 6 Bantaeng was rejected.

This research is in line with research conducted by Muammar Qadafi et al (2014) on factors related to smoking habits at SMK NEGERI 2 Bungoro said that the results of the analysis using statistics looking for the relationship of respondents' knowledge with smoking habits obtained a probability value of 0.247 > 0.05, it can be concluded that there is no relationship between knowledge and smoking habits.The results of another study are research conducted by Anisa Maulidea Binita, et al (2016) on the Relationship between Smoking Perception and Smoking Behavior Type in SMK "X" Students in Semarang City

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which showed that Ha results were accepted and H0 was rejected, meaning that there was no relationship between respondents' knowledge about cigarettes and smoking behavior. This is also in line with Harsa's (2014) research which states there is no relationship between the level of knowledge and adolescent attitudes about smoking.

The results of this study are also in accordance with Rina Yulviana's (2015) research on Factors Related to Smoking Habits in Class X and XI Young Men at SMA Negeri 6 Pekanbaru which shows that there is no relationship between adolescent knowledge and smoking behavior. According to Wahyuni (2010), before a person adopts behaviors inside the person, there is a successive process, namely awareness, feeling interested, weighing, trying, adoption where a person has behaved newly in accordance with his knowledge, awareness and attitude towards the stimulus.

Notoatmodjo (2010) in his book "Health Behavioral Sciences", mentions that knowledge is the result of human sensing which is mostly obtained through the sense of hearing (ear) and sense of sight (eye). A person's knowledge of objects has different intensities or levels, this we can find in research carried out at SMA Negeri 6 Bantaeng.

The period of adolescent ambivalence, which is filled with hesitant attitudes when making a decision, encourages vocational high school teenagers to tend to prefer friendship relationships compared to the choice to live a healthy life without smoking. His fear of the indifference of his group mates, made vocational high school teenagers want to look more present by mingling with the habit of friends in their environment, namely smoking, even though they were aware of the dangers they caused. In adolescence a person has a strong sense of attachment to his group. The interest to be recognized in his group can also be another reason for the ineffectiveness of attitudes in suppressing smoking behavior among adolescents.

The choice to be unkind or to disagree with various factors related to smoking habits could not be chosen because it was not able to beat the pharmacological, social, and psychological factors he needed. This means that in terms of pharmacological factors, the effect of nicotine has controlled feelings and habits. Judging from social factors, the importance of feeling more accepted in a friend's environment and looking mature, and feeling more comfortable dominates than choosing.

The social world of teenagers who include smoking as one of the builders of self-existence can give rise to an attitude of indifference towards various things caused by cigarettes. This condition can arise due to a social environment that tends to be indifferent various information about the dangers of smoking for the sake of its recognition to be accepted by its group. The consequences of maintaining his existence in the social environment in his group can encourage immature intellectual changes. Whereas at this age is according to Piaget the teenagers should get the perfect intellectual development.

According to Green's theory that individual behavior is influenced by the knowledge gained after sensing certain objects that are mostly obtained through the eyes and ears. Knowledge or cognitive is the most important thing that shapes a person's behavior (overt behavior) towards understanding health behavioral attitudes. Good knowledge will support good behavior (Notoadmodjo, 2010). The more health information obtained can influence and improve one's knowledge, so that it can generate awareness that in the end a person will behave and behave according to the knowledge he has (Balqis Annisa Ramdhani, 2017).

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The gap in the study can be seen in table 5.7 that there is no relationship between knowledge and smoking behavior, good knowledge and positive smoking behavior as many as 22 respondents (62.9%) because of the knowledge gained. Then it was considered by respondents as negative, so that their smoking behavior was more negative and knowledge was less with positive smoking behavior as many as 1 respondent (2.9%) because respondents did not really ignore the information obtained both from print media, mass media and counseling about smoking. This shows that good knowledge can reduce negative behavior. Meanwhile, lack of knowledge can increase a person to smoke because of lack of information.

2. Relationship of Attitudes about Smoking Behavior

Based on the results of the study with *the Chi-Square Tests* shown in Table 5.8, it is known that the value of p = 0.685 and the value of α = 0.05, which shows p > 0.05 which means that there is no significant relationship between attitudes and smoking behavior in adolescents at SMAN 6 Bantaeng, so it can be concluded that the hypothesis that states there is a significant relationship between attitudes and smoking behavior in adolescents at SMAN 6 Bantaeng is rejected.

This research is in line with research conducted by Ati Siti Rochyati (2016) on factors that influence smoking behavior in Vocational High Schools in Kapupaten Kabumen stated that adolescents who have the habit of smoking with a heavy category are more commonly found in the group of adolescents who have a bad attitude, namely as many as 162 people, this number is higher when compared to heavy smokers from the group of adolescents who have good attitudes of smoking behavior, which was 84 people. To determine the influence of adolescent attitudes on smoking behavior in vocational school adolescents in Kuningan Regency, testing was carried out using a statistical analysis of the chi square test, obtained X2 = 1.180, p value = 0.227, α = 0.05, and Odd Ratio value = 0.756 (95% = 0.422–1.321) The p value obtained was greater than α = 0.05 (0.227 > 0.05), it can be interpreted that there is no influence of adolescent attitudes towards the smoking behavior of adolescents of SMK Kuningan Regency.

Likewise, the results of research by Muammar Qadafi, et al (2014) on factors related to smoking habits in students of SMK Negeri 2 Bungoro, Pangkep Regency, showed that ha results were rejected and H0 was accepted, so that there was no relationship between attitudes and smoking behavior in students of SMK Negeri 2 Bunguro, Pangkep Regency.

The results of another study are research conducted by Novi Hariyanti, et al (2018) on the relationship of attitudes and self-confidence with smoking behavior in adolescent high school students x surabaya which shows that the results of Ha are accepted and H0 is rejected, meaning that there is no relationship between attitudes and smoking behavior in high school X students in Surabaya.

Attitude is as a level of tendency of a positive or negative nature related to the object of psychology, which includes symbols, words, slogans, people, institutions, ideas and so on. Individuals are said to have a positive attitude towards a psychological object if they like or have a favorable attitude, on the contrary, individuals who are said to have a negative attitude towards psychological objects if they do not like it or their attitude is unfavorable towards psychological objects (Notoatmodjo, 2007).

The attitude in Green's theory is one of the predisposing factors for the formation of a new behavior, to get a good attitude towards smoking behavior requires training on the

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dangers of smoking and how to overcome the consequences of smoking specifically and it is necessary to always have a refresher. Therefore, to improve the attitude of respondents who are still lacking in order to be good, regular health education is needed. Adolescence is a period of transition from childhood to adulthood followed by various problems that exist due to physical, psychic and social changes. The transition period caused many difficulties in adjusting to him and to the social environment. Various difficulties in self-adjustment have an impact on attitudes that appear as a reflection of his still labile personality. The desire to be recognized as an adult is often followed by imitating the habits of adults without being accompanied by careful thinking.

In fact, various choices made in adolescence are important things that can have direct repercussions for attitudes and behaviors and have long repercussions. The period of adolescent ambivalence, which is filled with hesitant attitudes when making a decision, encourages vocational high school teenagers to tend to prefer friendship relationships compared to the choice to live a healthy life without smoking. His fear of the indifference of his group mates, made vocational high school teenagers want to look more present by mingling with the habit of friends in their environment, namely smoking, even though they were aware of the dangers they caused. In adolescence a person has a strong sense of attachment to his group. The interest to be recognized in his group can also be another reason for the ineffectiveness of attitudes in suppressing smoking behavior among adolescents.

The choice to be unkind or to disagree with various factors related to smoking habits could not be chosen because it was not able to beat the pharmacological, social, and psychological factors he needed. This means that in terms of pharmacological

factors, the effect of nicotine has controlled feelings and habits. In terms of social factors, the importance of feeling more accepted in a friend's environment and looking mature, and feeling more comfortable dominates than choosing to be unkind to smoking. Judging from psychological factors, adolescent smokers believe that smoking can improve appearance and cause psychological comfort.

From the previous question that most students were found to be negative about smoking behavior, this was due to a lack of information, understanding and there had never been health education counseling in schools. After the information and counseling on health education about the dangers of cigarettes, there are differences in attitudes in students which are shown by students' answers have increased in a positive direction.

According to Notoatmodjo's theory, (2012) that an attitude is a reaction or response that is still closed from a person to a stimulation or object, belief, emotional life and the tendency to act together to form a whole attitude. Attitudes as a collection of beliefs that always include an aspect of evaluation, namely attitudes can be assessed in positive and negative terms. In the research conducted by Alamsyah (2016) on determinants of smoking behavior in adolescents in relation to attitudes in his research showed that attitudes are very important things related to smoking behavior, because in essence attitudes will determine a person behaves towards something object whether consciously or unconsciously the attitude is influenced by knowledge, beliefs and emotions.

The results of another study, namely the research conducted (Widiansyah 2014: Alamsyah & Nopianto, 2017), showed that there was a significant relationship between cigarette advertising and smoking behavior in adolescents. Cigarette advertisements are packaged as

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attractive as possible with the theme of friendship, friendship and togetherness. Cigarette advertisements are made very attractively and creatively touching the psychological side that shows the image of bold, macho trendy, cool, togetherness, relaxed, optimistic, manly, adventurous, creative, and critical as well as various other things that are proud and represent the conscience of young people and teenagers. This shows that it effectively influences students' behavior to behave smoking (Ministry of Health, 2011).

The gap in this study can be seen in table 5.8 obtained that there was no relationship between attitudes and smoking behaviors, good attitudes and positive smoking behaviors as many as 18 respondents (51.4%). Based on the results of the study, this was considered by respondents as a positive thing, so that for respondents smoking did not interfere with their good attitude and respondents continued to smoke. For bad attitudes with positive smoking behavior as many as 5 respondents (14.3%), bad attitudes with negative smoking behavior as many as 4 respondents (11.4%) because respondents did not really ignore the information obtained both from print media, mass media and counseling about smoking. This shows that a good attitude can reduce negative behavior, whereas the attitude is less than increasing a person to smoke because lack of information.

3. Environmental relationships about Smoking Behavior.

Based on the results of the study with *the Chi-Square Tests* test shown in Table 5.8, it is known that the p value = 0.002 and the value of α = 0.05, which shows p > 0.05 which means that there is a significant relationship between the environment and smoking behavior in adolescents at SMAN 6 Bantaeng, so it can be concluded that the hypothesis that states there is a significant relationship between the environment

and smoking behavior in adolescents at SMAN 6 Bantaeng is accepted.

This research is in line with the research of Muammar Qadafi, et al (2014) on which states that there is a relationship between the environment and smoking behavior. The results of another study, namely research conducted by Iceu Amira, et al (2021) stated that the environment (parents, friends, and advertisements) is one of the factors related to smoking behavior.

Likewise, research conducted by Ardy Widya Pangestu, et al (2017) on factors related to Shisha smoking behavior in HIGH SCHOOL X students in Semarang City which showed that ha results were accepted and H0 was rejected, meaning that there was a relationship between friends and smoking behavior in HIGH SCHOOL X students in Semarang City. Another research is also a study conducted by Alamsyah, et al (2017) which states that there is a meaningful relationship between cigarette advertising and smoking behavior (p = 0.000).

This is in line with the theory of Rita Sri Maryati Purba and Ana Faizah the relationship between the influences of parents and smoking behavior in adolescents in sungai lekop village, sagulung district, Batam City, parents have a very large influence in the behavior of their teenage children. This is due to factors such as the family environment which is very dominant in adolescent behavior, where adolescents are still always regulated by their parents and sometimes parents always force their teens to do things that teenagers do not want to do. And also the factor of adolescent parents who are always working so it is rare to supervise their teenage children.

This is in line with the article for DINKES (2010), where the factors that influence adolescents to smoke are the first factor is the influence of parents where adolescents who come from unhappy households such as parents do not pay attention to their children and

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provide harsh physical punishments are easier to become smokers than teenagers. Who come from happy families and also the behavior of parents who smoke so that teenagers follow suit. The second factor is the influence of friends. The third factor is the personality factor, and the fourth factor is the influence of advertising.

The family is a very influential environment for the development of children who are responsible for the cultivation of values and norms in the formation of children's behavior. Parents become role models for their children both positive and negative behaviors. The wrong parenting of parents can cause their children to fall into deviant acts such as smoking, using illegal drugs, promiscuity (King, 2013). In a family if one of the family members smokes, it is likely to influence them or other family members to participate in smoking, especially in children; they smoke to show their identity so that they can look more mature like their father or other siblings (Septian, syahrul & hermansyah, 2016). The results of a study conducted by Theodorus (2014) explained that the smoking family greatly influenced the smoking behavior of their children compared to non-smoker families.

In a study conducted by Yeni Riza and Erwin Ernadi (2021) on external factors of adolescents with smoking behavior in class Xi students at SMK Syuhada stated that adolescents generally associate with their fellows, the characteristics of adolescent friendships are influenced by similarities: age, gender and race. Similarities in using drugs, smoking are very influential in the selection of friends. Teenagers are more out of the house with their peers. If it is understandable that the attitudes, talks, interests, appearance and behavior of peers have a greater influence than that of the family.

According to Tarwanto (2010), the more teenagers who smoke, the more likely it is that their friends are smokers, at the age of 12-13 years old pressure from peers and other influences is more difficult to resist. If peers of the same age in school smoke, then younger teenagers will be tempted to join friends who smoke.This is also reinforced by the statement that the living environment is the environment in which the child or adolescent rests, a child is born and is formed by the social environment in which he lives, so that the living environment also affects the formation of the personality of the child or adolescent. The poor quality of the living environment will greatly affect deviant behavior towards adolescents such as juvenile delinquency and bad smoking habits.

The gap in the study was seen from table 5.9, it was obtained that there was a relationship between the environment and smoking behavior, the good environment with positive smoking behavior as many as 15 respondents (42.9%), the good environment with negative smoking behavior as many as 1 respondent (2.9%) and the bad environment with positive smoking behavior as many as 8 respondents (22.9%), the bad environment with negative smoking behavior as many as 11 respondents (31.4%). Here the results of the author's study found that there were several teenagers who smoked as a result of the influence of old people, the influence of friends and the influence of advertisements. This shows that adolescents must be given awareness from within themselves to quit smoking because smoking behavior will have a negative impact on the health of their bodies and it is necessary to be given supervision of smoking by parents and adolescents as well as parents who smoke must be given health education about the dangers of smoking for health in order to reduce the smoking rate in adolescents at SMAN 6 Bantaeng.

Acknowledgment

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We would like to express our gratitude to the Director of the Health Polytechnic of the Ministry of Health Makassar and all deputy directors. Not to forget, we also thank many thanks to the research friends and all participants in the research place.

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SANITATION BEHAVIOR, INFECTION AND BREAST FEEDING FACTORS AND INCIDENCE OF STUNTING IN INDONESIA: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Stunting in Indonesia is a public health problem nationally in the high category, reaching 30.8% in 2018. There is so many causes of stunting and some of them are related to sanitation, infection and breast feeding factors. This review article aims to analyze relationship sanitation, infection and breast feeding factors factors and incidence of *stunting* in children under five in Indonesia. The research method uses systematic literature review, with literature searches using several electronic databases. Article inclusion criteria: explaining sanitation, infection and breast feeding factors with the incidence of stunting in children under five in Indonesia, observational study design, publication year 2017-2022. The results study of 13 articles indicate that sanitation factors (use toilet facilities, open defecation behavior, disposal of underfives' feces not in latrines) infection (diarrhea) and breast feeding (exclusive and non exclusive breast feeding) are associated with the incidence of stunting in children under five in Indonesia. The conclusion this study reveals that sanitation, infection and breast feeding factors are associated with stunting in children under five in Indonesia. Health promotion efforts and intersectoral cooperation in sensitive nutrition interventions need to be increased to prevent *stunting* in Indonesia

Keywords: sanitation; infection; breast feeding; stunting; Indonesia

1. Introduction

Stunting is one of the nutritional problems in children under five that has become a global concern in recent years, especially in low and middle income countries including Indonesia (Bukusuba, J. et al, 2017). Stunting shows that there is a linear growth disorder (body length/height according to age) below -2 Standard Deviation (<-2SD) according to the World Health Organization (WHO) median standard, occurs due to chronic malnutrition and repeated infections during the first 1000 days of life (HPK) (Mbuya, M. N. N., & Humphrey, 2016; Vilcins, D., Sly, P. D., & Jagals, 2018).

Globally, there are 155 million children under five years of age (Balita) experiencing stunting (Vonaesch et al, 2018). WHO (2018) reports that Indonesia is one of the countries that contribute to the third highest stunting incidence in Southeast Asia reaching 36.4% from 2005-2017 (Kemenkes RI, 2019). The prevalence of stunting under five years of age in Indonesia, based on the basic health research report (Riskesdas), has increased from 2016 to 2018: 27.5% in 2016, 29.6% in 2017 and increased by 30.8% in 2018 (Kemenkes RI, 2019; Riskesdas Kemenkes RI, 2018). Stunting in Indonesia is a national public health problem that needs serious attention, because it is classified as high according to WHO standards, reaching 30-39%. The results of Riskesdas (2018), show that 34 provinces in Indonesia have different prevalences of stunting. There are two provinces with very high incidence rates exceeding 40% according to WHO criteria: East Nusa Tenggara 42.7% and West Sulawesi 41.6%, while 17 provinces as a contributor to the incidence of stunting reached 30-39% in the high category.

The problem of stunting that occurs in childhood has an impact on morbidity, mortality, impaired physical growth, impaired mental development, cognitive and motor development disorders. Disorders that occur tend to be irreversible and affect subsequent developments which can increase the risk of degenerative diseases as adults (de Onis, M., & Branca, 2016).

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Another impact that occurs due to stunting where children have less intelligence which affects learning achievement is not optimal and productivity decreases. If this continues, it will hamper the development of a nation's productivity in the future (Hossain, M., et al., 2017).

The causes of stunting consist of many factors that influence each other and the causes are different in each region (Kwami et al, 2019). The direct causes of stunting include inadequate nutritional intake and infectious diseases. Indirectly stunting can be caused by factors of family food security, parenting, health services and inadequate environmental health including water and sanitation. The basic causes of stunting are associated with education, poverty, socio-culture, government policies and politics (UNICEF, 2013 in Trihono et al, 2015). Poor environmental sanitation factors including inadequate access to clean water, use of unhealthy latrine facilities and poor hand washing hygiene behavior contribute to an increase in infectious diseases such as diarrhea, Environmental Enteric Dysfunction (EED), intestinal worms. These conditions can cause linear growth disorders and can increase mortality in children under five (Kwami et al., 2019).

Research on stunting problems with complex causes is carried out in various countries, especially in low and middle income countries. The research conducted not only focuses on nutritional problems and infectious diseases as the cause of stunting, but also on other supporting factors such as the nutritional adequacy of parents, socioeconomic status of the family. Other factors that are closely related to stunting are sanitation and hygiene factors (Hossain, M., et al, 2017). Research on the determinants of water, sanitation and stunting in children under five has not been widely studied in Indonesia compared to other developing countries. The purpose of this systematic literature review is to analyze the relationship between sanitation, infection and breastfeeding factors with the incidence of stunting in children under five in Indonesia.

2. Methods

This study uses a systematic literature review design to identify, evaluate, and summarize all the quality and relevant findings related to the relationship between sanitation, infection and breastfeeding with the incidence of stunting in children under five in Indonesia. This

systematic literature review begins by examining the question: What are the factors of sanitation habits, infection, and breastfeeding related to the incidence of stunting in children under five in Indonesia? 1) population in the study of children under five in Indonesia. 2) Exposure of interest explains sanitation, infection and breastfeeding factors 3) Outcome of stunting in Indonesia 4) Observational study (Cohort study, Case Control, Cross Sectional) 5) Year of publication 2017-2022 6) English and Bahasa Indonesia 7) full text dul article year 2017-2022.

Searching the literature from scientific publications in this systematic literature review uses several electronic databases, such as Springerlink, Pubmed, Science direct and Google Scholar with the keywords used are Sanitation Behavior "AND" Infection "AND" Breast feeding "AND" Stunting "AND" Indonesia. Meanwhile, search through Google Scholar with the keywords Sanitation, infection, breastfeeding, stunting, and Indonesia. The time limit is set in the title of the article for 2017-2020 with full text format in PDF form. Data on sanitation factors included use of toilet facilities, ownership of toilets, and disposal of toddler feces in latrines, while for breastfeeding factors included exclusive and non-exclusive breastfeeding and clinical infection factors included diarrhea.

The search process to selecting a number of articles uses preferred reporting items for systematic reviews and meta analysis (PRISMA). The selection process is shown in Figure 1.
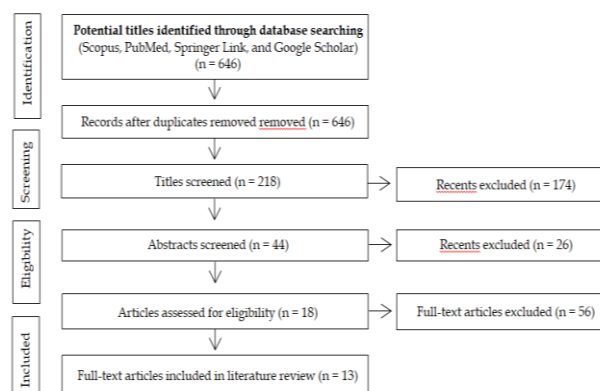
Figure 1. *Flow diagram of database search process*

Assessment of study quality on a number of selected articles based on The JBI critical appraisal tool for observational studies (Cohort study, Case Control, Cross Sectional). Studies with a high risk of bias were excluded. Then the results of the assessment with high study quality were carried out by data extraction.

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Synthesis of data in this systematic literature review uses narrative synthesis by providing a summary of information related to sanitation, infection and breastfeeding factors with the incidence of stunting in children under five in Indonesia. A positive relationship between sanitation factors and breastfeeding with the incidence of stunting from each article was obtained if the results of the statistical test were significant, the odd ratio (OR) value was more than one with a 95% confidence interval value.

3. Result and Discussion

Based on the results of article screening and determination of eligibility criteria, 13 Original Research articles were obtained that met the inclusion criteria for review. All articles reviewed used observational studies (Cohort study, Case Control, Cross Sectional). The results of the study can be seen in the extraction table attached to **table 1 below**.

Table 1. Data Extraction

No.	Penulis/tahun	Judul penelitian	Variable penelitian	Desain penelitian	Sampel	Hasil
1	Badriyah, L., & Syafiq, 2017	The Association Between Sanitation, Hygiene, and Stunting in Children Under Two-Years (An Analysis of Indonesia's Basic Health Research, 2013	VI: - water source, water quality, distance to water source, toilet facilities, Open defecation VD: Stunting	Cross Sectional	9.688 anak di bawah usia dua tahun.	Unimproved water sources (OR=1.18), toilet facilities did not meet the requirements (OR=1.33), open defecation behavior (OR=1.39), diarrhea (OR=1.1), associated with an increased incidence of stunting in children under the age of two in 33 provinces in Indonesia. Results also found that children who were not exclusively breastfeed were less likely to suffer from stunting (adjusted OR 0.87).
2	Joko Sugiyanto, Setyo Sri Raharjo, Yulia Lanti Retno Dewi, 2019	The Effects of Exclusive Breastfeeding and Contextual Factor of Village on Stunting in Bontang, East Kalimantan, Indonesia	VI : exclusive breastfeeding, history of infection, low birth weight (LBW), economic status, maternal education, maternal height, basic sanitation, and Community Based Total Sanitation (CBTS) urban village status	Case control	225 children	The risk of stunting decreased with maternal height exclusive breastfeeding (OR= -1.67; p= 0.042). It was increased with history of infectious disease (b= 2.23; 95% CI= 1.32 to 3.14; p<0.001), poor environmental sanitation (b= 1.83; 95% CI= 0.64 to 3.02; p= 0.003.
3	Laily Hanifah, Rifda Wulansari, Rini Meiandayati & Endang Laksminingsih Achadi	Stunting trends and associated factors among Indonesian children aged 0-23 months: Evidence from Indonesian Family Life Surveys (IFLS) 2000, 2007 and 2014	the age of children, birth weight, provision of prelacteal food, exclusive breastfeeding, provision of complementary food, mother's education, mother's occupation, health sanitation, ownership of Mother and Child Health Book, antenatal care and complete immunisation.	survei	1,263 children in 2000, 1,805 children in 2007, and 1,609 children in 2014 0-23 months	Significant associations between stunting and children's age, birth weight, mother's education, antenatal care, **health sanitation** and immunisation status were recorded in 2000. In 2014, stunting was significantly associated with children's age, birth weight, prelacteal food intake, ownership of Mother and Child Health Book and **health sanitation status**.
4	Rizki Aryo Wicaksono, Karina Sugih Arto, Erna Mutiara, Melda Deliana, Munar Lubis, Jose Rizal	Risk factors of stunting in Indonesian children aged 1 to 60 months		case-control	97 cases and 97 controls, totaling 194	internal risk factors of stunting were, non-exclusive breastfeeding (OR 3.64; 95%CI 2.01 to 6.61; P<0.001), chronic diarrhea (OR 6.56; 95%CI 3.33 to 13.01; P<0.001) and upper respiratory tract infections (OR 3.47; 95%CI 1.89 to 6.35; P<0.001). External risk factors of stunting

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					subjects	were unimproved sanitation (OR 2.98; 95%CI 1.62 to 5.48; P<0.001).
5	Rasyika Nurul Fadjriah*, Rusdianto Rusdianto, Herman Herman, Vidyanto Vidyanto	Factors Associated with the Stunting in Toddlers in the Work Area of Tikson Raya Public Health Center		Case control	50	the environmental sanitation hygiene variable with a p-value of 0.000 (< 0.05) and the mother's nutritional knowledge variable with a p-value of 0.017 (< 0.05). Toddlers who had less environmental sanitation might 17.874 times greater risk of becoming stunted than toddlers with good environmental sanitation hygiene. The environmental sanitation hygiene variable was identified as the most related to the value of odds ratio = 17.367.
6	Atik Purwandari, Gusti Ayu Tirtawati, Sandra Tombokan, Sjeny Tuju, Joice Silangen	Factors Related to the Event Stunting in Toddlers 25-59 Months in the Region Kolongan District Puskesmas North Minahasa District		Case control	66 moms with 25-59 bulan	The results showed that there is no relationship between sanitation and clean water with stunting, p = 0.159, there is a significant relationship between exclusive breastfeeding and stunting, p = 0.024, there is a significant relationship between MP ASI and stunting, p = 0.007, there is a significant relationship between infectious diseases and stunting, p = 0.007.
7	Rahim, Muhammad Syafar, Ridwan Mochtar Thaha, Sudirman Nasir, Aminuddin Syam, Stang	ANALYSIS OF DETERMINANTS OF INCREASED STUNTING INCIDENCE IN THE WORK AREA OF THE CEMPAE HEALTH CENTER PAREPARE CITY	VI : food intake, parental income, history of infectious diseases, history of exclusive breastfeeding, immunization status history, environmental sanitation, pregnancy screening history, mother's knowledge, mother's attitude	cross sectional	191 samples 24 to 59 months	there was a relationship between history of infectious disease (p=0.032), history of exclusive breastfeeding (p=0.000), environmental sanitation (p=0.016) , with an increase in the incidence of stunting in the region.
8	Luh Gede Pradnyawati, Dewa Ayu Putu Ratna Juwita, Nia Reviani	RISK FACTORS OF STUNTING IN KEDISAN, GIANYAR DISTRICT, BALI, INDONESIA	VI : Exclusive Breastfeeding, Complementary Foods with Breast Milk, Maternal Nutritional Status during Pregnancy , Low Birth Weight, Infectious Diseases, Family Income, Environmental Sanitation	Case control	children under five who were declared stunted in the village in question. There were 28 total cases of stunting; thus, the total sample used in the study was 56 samples in 2017	Based on the results of bivariate analysis, risk factors such as exclusive breastfeeding (p = 0.04; OR: 5.20), infectious diseases (p = 0.74; OR: 1.26) and environmental sanitation (p = 0.30; OR: 0.31) were not found to have a relationship with the incidence of stunting
9	Ria Muji Rahayu , Eti Poncorini Pamungkasari , CSP Wekadigunawan	The Biopsychosocial Determinants of Stunting and Wasting in Children Aged 12-48 Months	Pendidikan ibu, status ekonomi keluarga, status gizi ibu, berat badan lahir (BBL), Asi eksklusif, ISPA, Diare, air minum, sanitasi,	case-control	150 children under-five	The risk of stunting increased with infants receiveing no exclusive breastfeeding (OR= 5.70; 95% CI= 1.59 to 20.46; p=0.008). diarrhea (OR= 6.09; 95% CI= 1.42 to 26.20; p=0.015), and poor sanitation (OR= 7.67; 95% CI= 1.85 to 31.75; p=0.004).

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					pengetahuan
10	Chatrine Aprilia Hendraswari, Yuliasti Eka Purnamaningrum, Tri Maryani, Yani Widyastuti, Sakinah Harith	The Determinants of Stunting for Children Aged 24-59 Months in Kulon Progo District 2019	Exclusive breastfeeding history Energy intake Protein intake Immunization status Suffer from diarrhea Suffer from ARI Access to clean water Toilet	Case control	30 stunted children; the control sample was 30, not stunted children.	access to clean water factor found that there was no significant relation- ship between access to clean water and stunted children (p-value = 0.422, 95%CI). Children who consume un sanitized water have a 0.56 times greater chance of expe- riencing stunting than those who consume sanitized wa- ter. It means that access to clean water is a protective, or preventive, factor for stunting. the toilet factor found no difference in stunting between children who had good toilets and those who did not (p-value = 1.00, 95%CI). Children who do not use good toilets have a 1.00 time chance of stunting than those who use good toilets. Judging from the odds ratio, the toilet is not a risk factor for stunting.
11	Abdul Haris, Adelina Fitri, Ummi Kalsum. 2019.	Determinan Kejadian Stunting Dan Underweight Pada Balita Suku Anak Dalam Di Desa Nyogan Kabupaten Muaro Jambi Tahun 2019	VI : breastdfeeding duration, history of infection disease, immunization statuses, sanitation, number of family and food availability VD: stunting, underweight	Cross sectional	45 balita (usia 12-59 bulan)	The results showed that there was a relationship between the duration of breastfeeding and the incidence of stunting (P = 0.011; PR = 2.92; 95% CI = 1.26-6.76 The determinants that were not related to the incidence of stunting and underweight were a history of infectious diseases and sanitation
12	S Bulkis, I Summase, R A Nadja, Rahmadanih and Nirwan	Relationship between rice farmers household food security and stunting incidence in Enrekang Regency	VI: Food security VD: incidence of stunting (health services, environmental health, education, infection status, breastfeeding, parenting and sanitation)	Census	30 households	There is a significant relationship between sanitation variables (p-value = 0.024). Meanwhile, the variable that has no influence is breast feeding and infection in Ongko Village, Maiwa District, Enrekang Regency is sanitation.
13	Najib Najib, Nindiyastuti Nadia	DETERMINATION OF STUNTING IN TODDLERS IN DEMAK REGENCY	VI: the incidence of stunting VD: exclusive breastfeeding, energy intake, maternal education, maternal occupation, environmentaland economic status	Cross sectional	50parents of toddlers who were stunted	The direct causes of stunting are nutritional intake and infectious diseases. Environmental factors are the most important factor in the process of stunting is being in a poor environment.

The results of a systematic literature review found that most of the research results revealed that sanitation, infection and breastfeeding factors were associated with an increase in the incidence of stunting in children under five in Indonesia. This is in accordance with the 2013 UNICEF conceptual framework, Fenske et al, 2013 and WHO, 2014

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Sanitation Factor with Stunting Incidence in children under five in Indonesia

Most of the findings in rural areas of Indonesia related to sanitation using latrine facilities ranging from latrine ownership, types of latrines, latrines not using septic tanks, latrine hygiene, open defecation behavior and disposal of under-five feces not in latrines were associated with an increase in stunting in children under five in Indonesia (Badriyah & Syafiq, 2017; Chakravarty, I., Bhattacharya, A., & Das, 2017; Fadjriah et al., 2021; Fregonese, F., Siekmans, K., Kouanda, S., Druetz, T., Ly, A., Diabaté, S., & Haddad, 2017; Hanifah et al., 2018; Hendraswari et al., 2021; Mulaw et al., 2021; Najib & Nadia, 2021; Purwandari et al., 2022; Rahayu et al., 2018; Rahim et al., 2021; Sugiyanto et al., 2019; Trihono., Atmarita., Tjandrarini, D.H., Irawati, A., Utami, N.H Tejayanti, T. Nurlinawati, 2015; Wicaksono et al., 2021).

These findings are in line with research (Fregonese, et al, 2016), which states that children living in environments contaminated with inadequate sanitation have a 40% risk of stunting and are significantly higher in rural and suburban areas (43% vs 27%) compared to those living in urban areas (5%). An analysis in India proves that the incidence of stunting is highest in children living in rural areas because most people still practice open defecation (Chakravarty et al., 2017).

Efforts to reduce the incidence of stunting in children under five in Indonesia require sensitive nutrition interventions by improving environmental sanitation, constructing latrines in accordance with health requirements, carrying out health promotion efforts through education to increase public awareness not to perform open defecation behavior and disposal of feces including toddler feces. toilet. It aims to prevent fecal transmission as a vector of disease carriers in humans and the surrounding environment. So it can break the chain of spread of diseases such as diarrhea, EED, intestinal worms to reduce the incidence of stunting in toddlers in Indonesia.

Breastfeeding Factor with Stunting Incidence in Children under five in Indonesia

Some of this study figure out that there is a significant relationship between exclusive breastfeeding and stunting (Fadjriah et al., 2021; Muldiasman et al., 2018; Pradnyawati et al., 2021; Purwandari et al., 2022; Sugiyanto et al., 2019). The risk of stunting decreased with maternal exclusive breastfeeding. The direct causes of stunting are nutritional intake and infectious diseases.

Based on the research results, toddlers who are stunted, more than 50% do not have a history of exclusive breastfeeding. This is in line with research conducted by Komalasari et al. (2020) that breastfeeding babies contributes to the nutritional status and health of the baby. All substances a baby needs in the first six months of life can be met from breast milk. Breast milk can meet half of the nutritional needs of infants aged 7-12 months. In the second year of a baby's life, breast milk provides one-third of the nutrients needed.

Breast milk contains immune substances that protect babies from infectious diseases. In addition, breastfeeding is also associated with the growth of the child's body length. The duration of breastfeeding has a positive relationship with long growth, the longer the children are breastfed, the faster they grow both in the second and third years of life (Mugianti, S., Mulyadi, A., Anam, A.K., Najah, 2018)

Another study added that colostrum provides a protective effect on newborns so thatbabies who do not receive colostrum have a higher incidence, duration and severity of diseases, such as diarrhea that contributes to malnutrition (Supariasa IDN and Purwaningsih H, 2019).

Interestingly some Results also found that children who were not exclusively breastfeed were less likely to suffer from stunting. In one of the study (Badriyah & Syafiq, 2017) found that there was an inverted relationship between exclusive breastfeeding and stunting. This may have occured because of the quality and quantity of breastfeeding. Mothers who suffer from undernutrition have lower fat stores, which can affect her abilty to breastfeed, they also have a lower volume of breast milk and her protein and energy levels will be significantly lower than mothers with proper nutrition. As such the nutritional status of lactating mothers has a critical role toward exclusive breastfeeding success. Childhood stunting is affected by many different factors. Moreover, breastfeeding factors can be combined with other factors to create the condition of stunting in children.

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Infection with Stunting Incidence in children under five in Indonesia

Some of the study proved that there is a significant relationship between infection factor with the incidence of stunting. Toddlers who have a history of infection are more at risk for stunting. Infected toddlers (ARI or diarrhoea) have a 5.41 times greater risk of experiencing stunting (Dewi & Adhi, 2016).

Intestinal infection conditions in the form of diarrhea and EED can affect the nutritional status of children by reducing appetite, interfering with nutrient absorption which causes children to experience malnutrition and growth disorders. (Owino et al., 2016).

4. Conclusion and Sugestion

Various factors are associated with the incidence of stunting in toddlers and are interrelated with each other. Based on the results and discussion of this systematic literature review, it was found evidence that inadequate sanitation factors including unimproved drinking water sources, use of latrine facilities, latrine ownership, open defecation behavior, and disposal of under-five feces not in latrines are associated with an increased incidence of stunting in children under five in Indonesia. Diarrheal infection factors in toddlers and non-exclusive breastfeeding also affect the increase in stunting rates in Indonesia. It is necessary to increase health promotion efforts and program supervision in sensitive nutrition interventions, especially in the first 1000 days of life to prevent stunting in children under five in Indonesia.

5. acknowledgement

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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https://doi.org/10.14238/pi61.1.2021.12-9

CLINICAL CHARACTERISTICS OF TERSIANA AND TROPICAL MALARIA SUFFERERS IN OUTPATIENTS AT THE WIDIYA MEDIKA CLINIC, JAYAPURA REGENCY, PAPUA

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Abstract

Malaria is categorized as a re-emerging infectious disease or defined as a disease that has existed from ancient times that still shows its existence both from its occurrence, geography and host. This can be caused by the factor of increasing population mobility globally which is not directly involved in the spread of malaria cases, especially in non-endemic regions, including Indonesia, which has the top transmission. The incidence of malaria in Indonesia is 1/100 thousandth of the population. Malaria cases and deaths remain very high and bounce back in some settings, although recent developments inspire optimism. Malaria is caused by parasites of the genus plasmodium. There are four types of plasmodium that can cause malaria, namely plasmodium falciparum with an incubation period of 7-14 days, plasmodium vivax with an incubation period of 8-14 days, oval plasmodium with an incubation period of 8-14 days, and malarial plasmodium with an incubation period of 7-30 days. In Papua the most commonly found Plasmodium is Plasmodium Falciparum and Plasmodium vivax. The purpose of this study was to determine the Clinical Characteristics of tersiana and tropical malaria sufferers in outpatients at the Widiya Medika Clinic, Jayapura Regency, Papua. This research method is an analytical descriptive research and several variables using a cross-sectional study design. The results showed that patients who were treated for road treatment were affected by Tropical malaria 104 respondents (50.7%) and tersiana malaria 83 respondents (40.5%) and mixed malaria 18 respondents (8.8%). The average respondent suffering from tropical malaria and tersiana malaria will experience typical symptoms of increased body temperature, fever and sweating. In addition, the patient will also experience a dizzy head or headache as well as nausea and vomiting.

Keywords: Tropical Maria, Tertianal Malaria, Outpatient , Widiya Medika Clinic

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1.Introduction

In today's millennial era, malaria remains a global health problem, especially in countries that are endemic to malaria (Kai & Roberts, 2008). According to WHO (2018) there are 207 million cases of malaria with 627,000 deaths. Indonesia is a tropical country and has a high amount of malaria and has more than 20 types of anopheles sp mosquitoes which are part of the malaria vector. The five provinces with the highest incidence and prevalence were Papua (9.8% and 28.6%), East Nusa Tenggara (6.8% and 23.3%), West Papua (6.7% and 19.4%), Central Sulawesi (5.1% and 12.5%), and Maluku (3.8% and 10.7%). Of the 33 provinces in Indonesia, 15 provinces have a malaria prevalence above the national rate, most of which are in Eastern Indonesia (Kemenkes RI, 2017).

Malaria is a life-threatening disease caused by a protozoan parasite of the genus Plasmodium and transmitted in humans by the bite of a female species anopheles mosquito that acts as a malaria vector. These mosquitoes mainly bite humans at night from dusk (dusk) to dawn (dawn). In humans, there are known to be 4 genera of Plasmodium, namely, Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale and Plasmodium malariae. Malaria is a global problem, so WHO sets a global commitment on malaria elimination for every country. The guidelines for the implementation of malaria elimination have been formulated by WHO in the Global Malaria Programme. In 2008, as many as 247 thousand cases of malaria were reported from around the world and more than one million of them died, mainly children in Africa. Every 45 seconds a child in Africa dies from malaria (WHO, 2020).

Indonesia is a country with a high risk of malaria. According to Soedarto in his book mentioned that in 2017 as many as 396 districts out of 495 districts in Indonesia were malaria endemic areas. According to expert calculations based on health economic theory, losses can reach more than 3 trillion and have an impact on the income of malaria-endemic areas. In Indonesia, malaria is still a health problem that must be considered. Outside Java and Bali, morbidity and mortality rates are still high. The explosion of cases or outbreaks that cause deaths is also still high, especially in transmigration areas which are areas with a mixture of population from endemic and non-endemic areas.

According to statistical data obtained by the Basic Health Research (Riskesdas) in 2018, it is stated that the malaria parasite species that is widely found in Indonesia is Plasmodium falciparum which will result in falciparum malaria, with a prevalence rate of 86.4%. While the vector that is found especially in Central Java is Anopheles aconitus which breeds in rice fields and the time of its biting activity is before 24.00 (20.00 – 23.00). Since 2017, malaria can be monitored with the Annual Parasite Incidence (API) indicator with the requirement that each malaria case must be proven by examination of deleted blood preparations whose results are positive and must receive ACT (Artemisin – based 3 Combination Therapies) treatment. Based on the results of the Annual Parasite Incidence, the division of stratification areas obtained the results that the high stratification area is the eastern part of Indonesia, moderate stratification is several areas in Kalimantan, Sulawesi and Sumatra, while in Java and Bali it is a low stratification area, although there are still several villages or areas with high malaria cases.

The incidence of Malaria in Indonesia is estimated at 4.9 million out of 262 million people. Malaria cases in 2017 recorded 261,617 cases which have resulted in the death of at least 100 people. As many as half of the total 514 regencies/cities in Indonesia have reached the Malaria-free category. This means that 72 percent of the population in Indonesia lives in Malaria-free areas (Ministry of Health of the Republic of Indonesia, 2018). The malaria situation map is white or Malaria-free in Java and Bali, while the rest are mostly green (low endemic) such as in Sumatra, Kalimantan, and Sulawesi. Some areas in eastern Indonesia are still red or high endemic and yellow or middle endemic. The red and yellow areas are still widely found in eastern Indonesia, including Papua and West Papua, East Nusa Tenggara, and several areas of Kalimantan (Kemenkes RI, 2020). The prevalence of malaria in the Papua Province area in 2016 was 1.65 while in Jayapura City the prevalence was 0.17% (Riskesdas, 2018). In 2017 there was an increase in the prevalence of malaria in Papua Province by 24.3%. Especially for Jayapura City, the prevalence of malaria has increased to 27.8% (Riskesdas, 2018).

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The malaria morbidity rate reflected in the Annual Parasite Incidence (API) in Indonesia was 0.93 per 1,000 population in 2019. This figure is an increase from 2018 which was 0.84 per 1,000 inhabitants. In Indonesia, the highest malaria morbidity rate is in Papua. The figure is even far compared to other national and provincial averages, reaching 64.03 per 1,000 inhabitants. The provinces that recorded the highest malaria API were West Papua (7.38), East Nusa Tenggara (2.37), and Maluku (0.72). Annual Parasite Incidence (API) per 1,000 population is the proportion between malaria-positive patients to at-risk residents in the region with a constant of 1,000. (Read: World Malaria Day, Indonesia's Malaria Morbidity Rate Rises in 2019).

Malaria is caused by infection with plasmodium parasites transmitted through the bites of female anopheles mosquitoes (Haldar, 2009 & Sudoyo, 2009). In Indonesia, malaria parasites that are often the cause of malaria infection are Plasmodium vivax which causes tertiana malaria and Plasmodium falciparum which causes tropical malaria (Karyana, et al, 2008). However, when compared to P. vivax and other types of plasmodium, P. falciparum is the most common plasmodium species found in Indonesia (Elyazar, 2011). P. falciparum is known as the deadliest type of malaria (Sudoyo, 2009) When viewed from geographical distribution, the small Sunda Islands or Nusa Tenggara and Papua are two archipelagic areas in Indonesia with the most locations of P. falciparum and P. vivax spread compared to other regions in Indonesia (Sudoyo, 2009).

Malaria has a common clinical characteristic in the form of acute fever. In individuals that have not yet formed their immunity to the plasmodium or have the first infection, symptoms appear on the seventh day or more (usually the 10th to 15th day) after the bite of the first mosquito infected with the plasmodium. Early symptoms such as fever, headache, chills and vomiting are mild and difficult to identify as symptoms of malaria. Whereas if left untreated within 24 hours, severe tropical malaria can result in death. Children with severe malaria experience symptoms such as severe anemia, respiratory distress related to metabolic acidosis, or cerebral malaria. Realizing how varied the signs and symptoms of malaria, especially tropical malaria, which has

uncertain prodromal symptoms and is difficult to distinguish from other types of malaria even though if not treated quickly and appropriately it can be life-threatening, researchers decided to examine the clinical characteristics of people with tropical malaria. Research conducted by Junarli & Somia (2017) showed that the characteristics of tropical malaria patients experienced hypertemy of 64.8%, experienced petikie 55% and intravenous quinine treatment 22.5% and long-time inpatients went home in a state of 22.5% or 4 days of treatment in patients who were hospitalized.

The study was conducted in Papua Province which is a malaria endemic area in Indonesia with the first highest number of malaria cases in Indonesia. The research site that will be used as a sampling place is the Health Service Clinic in the Jayapura Regency area. The respondents who will be taken are outpatients in the clinic, because many patients think that to get services easier and faster to seek treatment at the clinic do not have to wait in line for a long time. Furthermore, during a pandemic like this, patients do not dare to come for treatment to puskesmas or public hospitals because they have to rapid test and PCR swab test.

The clinic where the research is carried out is usually per day at least 5-10 people who seek treatment who are diagnosed with malaria. Then in one month approximately 150-300 people are treated for malaria. For this reason, it is necessary to conduct a study with the title" Clinical Characteristics of Tersiana and Tropical Malaria Sufferers at the Outpatient Widiya Medika Clinic, Jayapura Regency, Papua.

2. Method.

This research method is an analytical descriptive study and several variables using a cross secctional study design. The population in this study were patients diagnosed with malaria who came for treatment at the Widiya Medika Clinic, Jayapura Regency. Sample determination is carried out by purposive sampling technique, namely by selecting samples among the population based on the criteria desired by the researcher in accordance with the objectives and problems of the study, so that the sample can represent previously known population characteristics (Sugiyono, 2017). The study was conducted in

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September – November 2020 total 205 respondents.

3.Result and Discuss

Tabel 1. Socio-demographic characteristics of tropical and tersiana malaria patients at the Widiya Medika Clinic, Jayapura Regency, Papua (n: 205).

No	Sosio demographic	N	%
1.	Age (year)	average	28,33±16,71
	0-10	50	24,4
	11-20	21	10,2
	21-30	49	23,9
	31-40	38	18,5
	41-50	31	15,1
	51-60	10	4,9
	>60	6	2,9
2.	Gender		
	Male	131	63,9
	Female	74	36,1
3.	Religion		
	Moslem	105	51,2
	Protestan	86	42,0
	Catholik	14	6,8
4.	Education		
	No - education	45	22,0
	Elementary School	7	3,4
	Middles School	6	2,4
	Senior High School	42	20,5
	University	106	51,7
5.	Job		
	Civil Servant/Police/Army	29	14,1
	self-employed	107	52,2
	housewife	9	4,4
	student	60	29,3
6.	Marital Status		
	Married	124	60,5
	Unmarried	81	39,5
7.	Type of blood		
	A	21	10,2
	B	1	0,5
	AB	23	11,2
	O	160	78,0
8.	etnic		
	Papua	33	16,1
	Non-Papua	172	83,9
9.	Residence		
	Mountain	179	87,3
	lakeside	22	10,7
	coast	4	2,0
	Total	205	100

The results showed that the age of the most respondents was between the ages of 0-10 years with a total of 50 people (24.4%). This is in accordance with research conducted by Junarli & Somia (2014) that the characteristics of respondents in tropical malaria patients who are hospitalized are mostly aged 0 – 10 years. However, in contrast to the results of research conducted by Siahaan Lambok (2008) said that malaria patients who are in endemic areas are mostly in adulthood. Jayapura Regency is an endemic malaria zone. Age 0-10 years is an age that is still weak in its immunity so that suffer is easily affected by malaria.

The results showed that the sex that was most predominantly affected by malaria was men with 131 people (63.9%). This is different from the research conducted by Junarli & Somia (2017) which is the most numerous, namely women. In the research we conducted, namely outpatients in private clinics. Male patients predominantly get malaria due to men as heads of households so many work overtime, besides that men prefer to stay up late than women. The bite of this malarial naymuk is more common at night. Until now, there are still 41 regencies/cities in Indonesia that have high malaria endemism.

The results showed that the most patients were Muslims, namely 105 people (51.2%). From the observations of patients who come and around the clinic, they have Islamic beliefs. No relation to religion.

The results showed that the most number of respondents were highly educated, amounting to 106 (51.7 %). This shows that in the area around the new doyo is a growing residential area. There was no association with patients with the knowledge of poorly educated and highly educated respondents. However, it is also likely because of private clinics so that people who cannot afford it do not dare to seek treatment prefer to go to the Public Health Center. The results showed that the most respondents' jobs were self-employed, estimated to 107 people (52.2%). This shows that respondents worked as construction workers, day laborers, motorcycle taxi drivers, and traders. The

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community around Doyo Baru area during this pandemic has experienced very limited physical activities to work but during September – November 2020, surrounding shops have been given a deadline allowance for selling or trading until 09.00 PM. Non-sedentary work or high mobility are at greater risk of malaria, such as service duties in endemic areas for long periods of time up to years for example nursing health workers, doctors, military officers, missionaries, construction workers of the 2021 National Sports Week project and others.

The results showed that the respondents affected by malaria were the most blood type O totaling 160 people (78.0%). Based on a study from Japan, precisely from the Institute of Pest Control Technology, mosquitoes are more interested in blood type O than other blood types (A, AB, B). However, another unique fact of people who have blood type O is said to tend to have a lower risk of suffering from malaria. This is because the deadly malaria protein is difficult to attach to blood cells O. Blood type O is the only type of blood group that does not have antigens. Researchers from Scandinavia (Mats Wahlgren, 2015) explain the reasons why this can happen. This is all because malaria-carrying mosquitoes that secrete proteins (such as glue) into human blood cells will clog blood flow, causing death. This protein will easily clog in blood type A, but it is so weak when flowing in blood type O.

The results showed that the most respondents came from Non-Indigenous Papuan Tribes (Non-OAP) totaling 172 (83.9%). This is different from the research conducted by Jimmy Sembay (2018) that of the 1112 respondents of the Papuan tribe, there were more than 90 people (80.35%), while the Non-Papuan tribe was 22 people (19.6%). We think our respondents' researchers are more Non OAP tribes because we do research in private health clinics so that indigenous Papuan people rarely go to private health clinics and more to government-owned public health service places such as public health centers and hospitals. In addition, indigenous Papuans have a Papuan health insurance card. So they prefer public places.

Tabel 2. Results of laboratory examination of tropical malaria patients at Widiya Medika Clinic, Jayapura Regency, Papua

No	Result of laboratory	average	Standar deviasi
1.	Hemoglobin	14,23 gr/dL	1,35
2.	lecocyte	6939,02/ mm^3	1502,49

The results showed that hemoglobin levels of 205 tropical and tersiana malaria patients were 14.23±1.35 gr / dL. In this study, the overall hemoglobin level of the patient was within the normal range. Similarly, research conducted by Junarli & Somia (2017) that patients who were hospitalized with malaria disease showed normal hemoglobin levels on average. Some patients have anemia. Research conducted by Rosa (2011), proved that parasites in malaria also affect changes in hematology, this can be seen in the presence of symptoms of anemia, namely paleness, fatigue, and the body feels weak. The results of a study conducted by Armedy (2010), that Plasmodium Falsiparum infection causes changes in the shape of erythrocytes that trigger erythrocytes that trigger erythrocytes in the spleen, inducing an immune response to increase phagocytic opsonization through activation of the immune system, which can lead to a decrease in hemoglobin levels.

The results of the lecocyte examination in a study at the Widiya Medika Clinic, Jayapura Regency, showed that the average lecocyte was normal. This is similar to the research of Junarli & Somia (2017) that lecocytes in patients who are hospitalized in Atambua Normal hospital. In addition to hemoglobin levels, the results of leukocyte and platelet counts in 71 tropical malaria patients at the Mgr. Gabriel Manek Regional General Hospital, SVD Atambua also showed normal values. Research conducted by Olutola and Mokuolu in 2006 on children with malaria with severe anemia in the pediatric emergency department at a hospital in Nigeria instead showed an increase in leukocytes and a decrease in platelets. Of the 93 study subjects, 4.4% had leukopenia, 41.9% had a normal number of leukocytes and 53.7% had leukocytosis. Meanwhile, 76.4% of patients had thrombocytopenia, 21.5% were normal, and 2.2% had thrombocytosis.

Tabel 3. Symptoms felt by tropical malaria patients at the Widiya Medika Clinic, Jayapura Regency, Papua.

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Symptoms	N	%
Fever		
Yes	205	100
No	0	0
Shiver		
Yes	205	100
No	0	0
sweating		
Yes	150	73,2
No	55	26,8
nausea and vomite		
Yes	155	75,6
No	50	24,4
Headache		
Yes	150	73,2
No	55	26,8
weakness		
Yes	152	74,1
No	53	25,9
Pale		
Yes	149	72,7
No	56	27,3
Total	205	100

Based on the symptoms felt, all tropical malaria patients (100%) at the Widiya Medika clinic in Jayapura Regency felt symptoms of fever and chills. Some symptoms are felt by some tropical malaria patients, but not felt by others. A total of 150 patients stated that they experienced symptoms of sweating (73.2%), while another 55 patients (26.8%) stated that they did not feel it. The presentation also occurred in headache symptoms, where as many as 73.2% of patients experienced it and 26.8% of other patients did not experience headache symptoms.

This is in accordance with research conducted by Putra (2011) showing that clinical syndromes caused by malaria differ depending on whether the patient lives in an area with stable (continuous) endemic malaria transmission or stable (sometimes and / or rarely). In regions with stable transmission, the disease affects the child and adults in different ways. The child has a chronic infection with recurrent parasitemia resulting in severe anemia and frequent death. The life-resistant of this recurrent infection can be partially immune at the age of five and this immunity remains restrained in adulthood. Adults develop asymptomatic infections. After an increase in temperature, malaria sufferers will experience chills / feel cold, at this stage the patient experiences a fever attack. The patient's face becomes red, the skin is dry and feels very hot like burning, headaches get harder, and are often accompanied by nausea or vomiting. The patient's pulse becomes strong again. Usually sufferers feel thirsty coconut milk and body temperature can increase to 41 C. this stage lasts for 2-4 hours. At the advanced stage, the patient will experience a lot of sweating, until it wets the bed. But the body temperature in this phase drops rapidly, sometimes to below normal. Usually the sufferer falls into a deep sleep and at the time of wakefulness, he feels weak, but without other symptoms. The stadium lasts for 2-4 hours (Singh, et al, 2012).

4.Conlussion and Sugestion

The average patient suffering from tropical malaria and tersiana malaria will experience typical symptoms of increased body temperature, fever and sweating. In addition, the patient will also experience a dizzy head or headache as well as nausea and vomiting.

For the next researcher to see how to conduct qualitative research on why malaria patients are tersiana and tropical typical symptoms that appear.

5. Acknowledgements

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The effectiveness of nursing psychoeducation toward family coping of caregivers of people with schizophrenia in the community

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Abstract

Background: Caregiver of people with schizophrenia have problems in caring patients with schizophrenia including using family coping stragies. Therefore, it is necessary to do nursing psychoeducation to overcome the problems faced by the caregiver at home.

Objective: To determine the effectiveness of nursing psychoeducation on family coping strategies in caregivers of schizophrenia in the community.

Method: This research method was a study with a pre-test and post-test group control design with repeated measurement with a total of 100 respondents. The treatment group was given nursing psychoeducation for seven sessions conducted every week. Univariate analysis and general linear model (GLM) was used to analize..

Result: This study showed that before the intervention of nursing psychoeducation the average family coping strategies was 88,68 (5,92) in the treatment group and 88,60 (7,19) in the control group. It improved to 108,28 (10,14) in the first week of post-treatment and 107,08 (6,58) in the fourth week of post treatment. While the control group was 88,28 (3,85) in the first week and 88,02 (3,77) in the fourth week. Besides that, nursing psychoeducation had an effect on improving family coping strategies with p value < 0.001.

Conclusion: Nursing psychoeducation could have an effect on improving family coping strategies caregivers. Therefore, the management of schizophrenia should not only focus on the patient but also on the family as a caregiver.

Keywords: Psychoeducation; family coping; caregiver.

1. Introduction

Patients with schizophrenia who have been discharged from hospital and live with their families often relapse with behavioral and emotional disturbances caused by low medication adherence, lack of family support, lack of interpersonal relationships and stressful life events (Zhang, 2016). The study stated that 52% of schizophrenic patients experienced a relapse once a year after being discharged from the hospital (Gonçalves-Pereira et al., 2013). Factors that contribute to the relapse of schizophrenic patients are an unsupportive family environment, feelings of inferiority and worthlessness, side effects of drugs that patients often experience and do not have a job. This is the importance of the family as a caregiver to be able to get a clear understanding of caring patient with schizophrenia at home. Mental disorders need to get continuous services because the impact of mental disorders is not only experienced by people with mental disorders, but also families or caregivers who care for them (Gonçalves-Pereira et al., 2013). Mental disorders cause susceptibility to psychosocial problems in families who care for them, including feelings of

worry and guilt. The psychological burden experienced by the family, the stigma in society often makes the families of patients with schizophrenia into a group that is vulnerable to mental disorders (Fitryasari et al., 2018).

The family is the center of nursing services because the family is a source of fulfillment of individual needs. All dysfunctions that occur in the family will have an impact on one or more family members or the whole (Fitryasari et al., 2018). The family is also a system, so if there is a disturbance in one of its members, of course it will affect the whole system.

The paradigm shift in mental health services that focuses on services in the community (deinstitutionalization) has resulted in the family playing an important role in providing the care that patients need at home (Sin et al., 2021). In addition, there has been a change in the focus of management, namely from biological symptoms and their pathological implications to specific interventions to address the spectrum of sequelae, biological, psychological, social, and cultural consequences of severe mental disorders (FK UI, 2013). The success of hospital care can be less

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than optimal if it is not followed up with nursing care at home because it can result in the patient having to be hospitalized again (relapse).

Families play an important role in handling and preventing recurrence of mental patients (Stuart, 2016). The family is very important in dealing with mental disorders in the community. This is because health workers are limited, patients live with their families, make it easier for patients to be independent, sources of support are more varied, the costs are cheaper, and patients are easier to adapt and require long treatment to overcome psychological symptoms (Fitryasari et al., 2018). This condition requires the participation of the community and family in improving mental health efforts. Families face challenges when caring for patients at home, due to the condition and behavior of schizophrenic patients. This can be a burden in life for the family.

The concept of family burden describes the negative impact of mental illness/disorder on the family. The family burden in caring for person with schizophrenia can be divided into two types of objective and subjective burdens. Objective burdens include practical problems in family and problems related to having family members with schizophrenia patients, such as loss of income and disruption of routine household activities, while subjective burdens include psychological and emotional impacts on family members including feelings of sadness and worry (Glanville & Dixon, 2005). Based on the results of research stated that families who have relatives suffering from schizophrenia experience a very high burden as a consequence of treatment so that it negatively affects all areas of their lives (Caqueo-Urízar et al., 2016). Study revealed that schizophrenia is a severe mental illness, which places a heavy burden on the family as caregiver (Kate, N., Grover, S., Kulhara, P., & Nehra, 2014). In addition, caregivers experience a lot of physical, emotional and financial stress due to the patient's abnormal behavior, as well as social and occupational dysfunction. This burden is mainly felt by those closest to them, namely the family as caregivers who live together, interact regularly, and assist patients with daily activities (Grover et al., 2015). Caregiver burden as a psychological condition that arises which is a combination of physical work, emotions, social pressures, and financial restrictions that are a consequence of caring for patients

(Caqueo-Urízar et al., 2016). study found that family members who live with patients or spend a lot of time with sick relatives will feel more burdened and the level of caregiver burden is usually associated with the level of dysfunction or disability, the severity of negative and positive symptoms and the duration of schizophrenia, the frequency of visits to the hospital, the distance from home to the hospital (Kate et al., 2013). study explained that caregiver burden is used to describe the severe consequences of mental disorders for families as caregivers (Kate, N., Grover, S., Kulhara, P., & Nehra, 2013). The family burden is not only the burden of care but extends to include physical, psychological, social, and financial problems experienced by families who care for clients with chronic or mental (Tanriverdi & Ekinci, 2012).

The shift in the mental health care system from hospital-based care to community-based care has caused families to take a greater role in caring for patients (Tanriverdi & Ekinci, 2012). The family as a caregiver is at the forefront of caring for family members with schizophrenia(Tristiana et al., 2019). Changes in roles and responsibilities, high treatment costs, inappropriate behavior of schizophrenic patients, shame, and negative stigma towards schizophrenic patients and their families cause changes in family dynamics. This condition can affect health conditions and become a burden on the family as a family caregiver (Puspitosari et al., 2019). The symptoms raised by this person with schizophrenia will cause the family to experience conditions of stress, frustration and ineffective coping. Therefore, a coping strategy is needed to reduce the burden on the family. Coping strategy is one of the factors that can affect the quality of life of caregivers. Based on the research, caregivers with effective coping strategies have a higher level of commitment in caring for schizophrenic patients and are able to reduce their psychological morbidity (Wardaningsih, S., Rochmawati, E., & Sutarjo, 2010).

Families as caregivers for schizophrenic patients are at risk of having a lower quality of life due to mental and physical health problems, as well as high family burdens (ZamZam, R., Midin, M., Hooi, L. S., Eng, J. Y., Ahmad, S. N., Azman, S. F., 2011). Several studies have shown that families of schizophrenic patients have a lower quality of life compared to caregivers of patients with other psychiatric diagnoses and compared to the

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general population (Panigrahi, S., Acharya, R. K., Patel, M. K., & Chandrani, 2014). The caregiver's quality of life has a direct impact on the patient's symptoms and indirectly on the patient's quality of life. In addition, quality of life has been shown to be a predictor in the functional recovery of schizophrenic patients. Thus, the quality of life for families as caregivers needs to be an important issue for health professionals and policy makers in considering providing interventions to families as caregivers (Caqueo-Urízar et al., 2017).

Psychoeducation is one of the therapeutic modalities in mental health nursing that provides ways to overcome psychosocial problems and provides skills to care for clients that given by the therapist through family meeting sessions (Sarkhel.S., Singh.OP., 2020). Psychoeducational interventions not only provide training but also provide emotional reinforcement, psychological and social support to reduce feelings of anxiety . This is certainly very helpful in reducing the subjective and objective burden of the family (L. et al., 2012). Psychoeducation is an effective therapy and if intervention is carried out on families as caregivers in groups, it will save costs, because in this way the therapist can work with many families at the same time (L. et al., 2012). Study conducted a study to assess the efficacy of family psychoeducation programs in changing behavior and health perceptions in families with schizophrenia. This study stated that family psychoeducation could change the family's negative behavior towards people with schizophrenia (L. et al., 2012). In addition, the study conducted a study to assess the efficacy of family psychoeducation interventions on caregivers of schizophrenic patients on quality of life. The results of this study indicated that most caregivers experienced a significant increase in the overall quality of life scores observed in the experimental group caregivers compared to the control group. The study conducted a study that aims to test the efficacy of the psychoeducational intervention program (PIP) compared to standard care to reduce caregiver burden at post-intervention (4 months), and at follow-up (8 months). The results showed a change in scores since the baseline on the Zarit Burden Interview (ZBI) and Involvement Evaluation Questionnaire (IEQ) (Martín-Carrasco et al., 2016).

Nurses play an important role in psychoeducational programs, because nurses have frequent contact with caregivers. The increasing involvement of mental nurses with psychoeducational programs has been demonstrated through the literature (Matsuda & Kohno, 2016). Therefore, nurses must provide accurate information and skill to caregiver, so the caregiver will have well knowledge and high skill in dealing patient with schizophrenia at home. The general objective of this study was to know the effect of nursing psychoeducation on family burden and coping skills and quality of life of caregivers for person with schizophrenia

2. Method

This research is an experimental study with a pre-test and post-test control group design with repeated measurement. The affordable population in this study is a family as a caregiver whose family member has schizophrenia who is in the mental health alert village area in three areas. the area of the public health center, Magelang regency (Mungkid, Sawangan I, Candimulyo). Respondents in the study were divided into two groups, namely the treatment or experimental group and the control group, and had signed an informed consent. The paired simple randomization was applied. The intervention group was the group that received the psychoeducational nursing intervention for 7 sessions which was conducted once a week. While the control group is a group that does not receive nursing psychoeducation intervention.

This research was conducted at the Public health center in the working area of Magelang Regency which has a community mental health program and has developed a mental health alert village. The study was conducted from January to April 2020. The data collection procedure was carried out through primary data obtained by filling in the provided instruments, including 1) personal data questionnaire, 2) Family coping questioner (FCQ) . Secondary data were obtained from the results of the patient's medical records at the public health center and the results of family interviews in the working area of the public health center, Magelang regency. The procedure for data collection was carried out by: 1) Patient data recorded at the public health center, then traced by the mental health coordinator nurse at the public health center to ensure the eligibility of caregivers who care patient with schizophrenia to participate in the study according to the criteria and if they agree to be involved in this research, the doctor or person

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in charge of mental health at puskesmas provide a letter of willingness to be involved in research to researchers; 2) caregivers of patient with schizophrenia who meet the requirements to become research subjects are given an explanation of the research objectives, and are asked for their willingness to participate in the entire research process by the researchers; 3) After obtaining informed consent, it will be continued by giving an invitation to come to the nearest public health center at a predetermined time and the data collection process and implementation of all nursing psychoeducation sessions according to the schedule will be completed. 4) Filling out the informed consent and instruments carried out by the research subjects themselves; 5) Personal data questionnaires and instruments to measure family burden, quality of life that have been completed and then collected back to the research team to see the completeness of the data; 6) Caregivers who have completed filling out the instruments are given a transport fee of Rp. 50,000 as an expression of gratitude from the resea Nursing psychoeducation was carried out for 7 sessions. Each session is divided into 4 stages which include: pre-interaction stage, orientation stage, work stage, termination stage. The topics in this nursing psychoeducation are: session 1: identification of family problems, session 2: definition, response ranges and causes of schizophrenia. session 3: symptoms and effects of schizophrenia session 4: how to care for people with schizophrenia session 5: management of relapse in people with schizophrenia. session 6: stress management, and session 7: family burden management and family empowerment

The data obtained in this study will be analyzed in the following stages: Univariate analysis was carried out by descriptive analysis to see the characteristics of each variable studied. The general linear model statistical test was used to find the effectiveness of nursing psychoeducation on family burden and quality of life of caregivers of person with schizophrenia..

3. Result and Discussion

The results of this study indicate that the majority of the caregiver's age group is more than 35 years old and the gender of the respondents in this study is dominated by women in both the treatment group and the control group. The education level of the most respondents was college graduates, each with 21 people (42%) in the treatment group and 24 people (48%) in the control group. Furthermore, high school education levels were 19 (38%) in the treatment group and 17 people (34%) in the control group.The results of this study also showed that most of the caregivers were married, as many as 40 people (80%) in the treatment group and 39 people (78%) in the control group. The caregiver's job as a trader is 17 people (34%) in the treatment group and 15 people (30%) in the control group. The majority of respondents in the treatment group were their life partners (husband/wife) as many as 21 people (42%), while in the control group the majority were parents as many as 23 people (46%) and the duration of caring for family members was mostly for more than 5 years by 26 people (52%) in the treatment group and 33 people (66%) in the control group.

This study showed that there was a significant difference in mean before and after giving nursing psychoeducation. In the first week after giving nursing psychoeducation, it showed that there was a difference in the average family coping strategies as a caregiver in the treatment group and the control group of 48.78. Likewise, in the 4th week post test after providing nursing psychoeducation, it still showed a decrease in the family burden score with a difference of 41,58 between the treatment group and the control group. The results of this study stated that nursing psychoeducation has a statistically and clinically significant effect in improving families coping strategies as caregivers for person with schizophrenia (p value <0.001).

The results of this study stated that before giving nursing psychoeducation, the majority of respondents, both the treatment group and the control group, experienced a fairly low using family coping strategies in caring for their family members suffering from schizophrenia. The control group had a mean family coping strategies score of 88,60 (7,19) and in the treatment group the average family coping strategies score was 88,68 (5,92). This could be caused because schizophrenia is a severe mental disorder that causes a decrease in social function and has the potential to cause a long-term burden for the family as caregiver. The burden experienced by caregivers includes meeting daily needs, finances and even families can also lose

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their jobs (Zhou et al., 2016). This also happens in Indonesian society that not only must meet the needs of family members who suffer from schizophrenia, families also feel subjective burdens including shame, anxiety, guilt and stigma. The burden of families with schizophrenia sufferers has a high level of distress and difficulty, especially during the early phase so it needed family coping strategies. The results of this study are in accordance with the research conducted who identified the family burden experienced caregivers of by person with schizophrenia which included objective and subjective family burdens (Ozlu, A., Yildiz, M., & Aker, 2015). The objective burden included the cost of care, housing, food and transportation. This was in accordance with what was experienced by caregivers in this study who had to take the patient for control to a health facility, prepare daily needs, control medication adherence and monitor the patient's behavior and emotions at home. While the subjective burden was worrying if the patients experience a relapse and there was still a stigma from the community.

Schizophrenia management in the community was not only done for sufferers but should also focus on families as caregivers (Öksüz et al., 2017). It could increase understanding in caring for patients at home, reduce the stress, improve coping and the quality of family life as caregivers. Caregivers need to get health services which were part of the management of schizophrenia in the community setting.

The results of this study were supported by another study conducted in Japan to provide psychoeducation for caregivers with schizophrenia in the community by visiting nurses (Yasuma et al., 2020). The results showed that there was a significant reduction in family burden after home visits and psychoeducation.

Psychoeducation was effective in increasing knowledge and positive coping with the patient's family but it was less useful in reducing psychological morbidity, care burden or emotional expression. Psychoeducation conducted in this study in the form of groups where participants could exchange experiences, increase knowledge and skills facilitated by health workers.. This is in accordance with the research which states that psychoeducation

could increase caregiver's knowledge about psychosis (Marchira et al., 2017). Psychoeducation was recommended to be carried out as early as possible from the first contact of caregivers with severe mental disorders to health workers and on an ongoing basis (Sin et al., 2021). Psychoeducation could reduce the burden of family care because it could improve the quality of life of patients and families and reduce the severity of symptoms experienced by patients (Navidian et al., 2012). Psychoeducation carried out in this study was carried out in the form of groups so that caregivers could interact with each other among participants and health workers and gain knowledge and skills regarding the definition, causes, symptoms, signs, care and treatment management, stress management and family burden management as well as preventing recurrence. and family empowerment. Families as caregivers who care for people with schizophrenia need to get support for community-based mental health services. This is because people with schizophrenia living with their families need to get long-term care which will increase the burden of family life as caregivers, for example financial burdens, time devoted to caregiving, resulting in loss of job opportunities and reduced income. And it takes a long time to manage stress when caring person with schizophrenia and the stress increases when families experience a relapse. In addition, caregivers are also worried about the future of person with schizophrenia if the family as caregiver dies.

The majority caregiver of person with schizophrenia experienced a burden that could be caused by the deteriorating condition of patients who require long-term care and decreased ability to interact with other people so it is needed family coping strategies. Caregiver burden results in physical and mental health, social relationships, and caregiver's financial condition, psychological morbidity, less free time, workload, and caregiver burnout. In addition, caregiver emotional problems arise such as feelings of frustration, anger, shame, fear, sadness, and stress due to the patient's behavior, as well as negative attitudes towards the patient. The results of this study were in accordance with a study which showed that there was a decrease in the family burden in the group receiving psychoeducation treatment compared to the control group (Shiraishi et al., 2019). The results

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of this study were consistent with this study, this is because psychoeducation serves to inform about illness and how to deal with it, to provide emotional support to caregivers and to implement coping strategies and stress management (Tabeleão et al., 2018). The family burden was an important thing and needs attention which is the result of a chronic disease condition and considering that the patient lives with his family. The family burden occurs because of the emotional reaction to illness suffered by family members, the family's ability to cope with psychological problems due to caring for person with schizophrenia, the stigma that arises as well as social withdrawal and family economic problems. The caregiver's burden was caused by the distress they experienced, disrupted routine activities, caregivers must care for and fulfill their daily integrity (Zhou et al., 2016). Nursing psychoeducation carried out in this study was a comprehensive model which is a combination of a model that focuses on providing information to families about the disease and its management (information model), a model that focuses on skills so that family members can treat it effectively (skill training model), and a model that involves families sharing feelings in a support group (Sarkhel.S., Singh.OP., 2020). Nursing psychoeducation was carried out in groups so that caregivers can interact with other caregivers and gain knowledge and skills in definiting causes, response ranges, signs and symptoms, management of care for family members at home, stress management, family burden management and prevention of recurrence and empowerment of families as caregivers.

4. Conclusion and Sugestion

There was a improving in the mean score of using family coping strategies in the group who received nursing psychoeducation compared to those who did not receive nursing psychoeducation and the study showed that the effectiveness nursing psychoeducation toward using family coping strategies. The study showed that the effectiveness nursing psychoeducation toward family coping strategies in emotional, focus coping and problem focus coping.

5. Acknowledgements

We would like to thank to the head of Public health center and nurses who involved in this study and the following team members for their contributions to the success of this study

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Publisher : Politeknik Kesehatan Kemenkes Semarang
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NURSING ETHICS IN PARTICIPATING IN ABORTION

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Abstract

At this time, abortion is a very controversial issue where there are many pros and cons of abortion. abortion or abortion is the intentional termination (termination) of pregnancy (abortion provocatus). The purpose of this study is to examine the juridical normative perspective on how the criminal law through existing legislation provides sanctions against nurses who perform abortions as well as the legal construction of the Criminal Code and Law No. 36 of 2009 on health. Abortion according to the juridical construction of laws and regulations in Indonesia is the act of aborting or shutting down the content that is done intentionally by a woman or person who is told to have an abortion.

Key : *Ethics, Nursing, Abortion*

Introduction

One of the human rights included in the Constitution of the country is the right to life as described in Article 28 (A) of the Constitution of 1945 which reads "every person has the right to live and has the right to maintain his life and life". Currently abortion is one of the serious problems, judging from the high number of abortions that are increasing from year to year.

In Indonesia alone, the rate of fetal murder per year has reached 3 million. Abortion is the end of pregnancy before the child can live in the outside world. The child may live in the outside world if he weighs 1000 grams or is 28 weeks pregnant. Generally accepted as abortion is 20 weeks gestation or fetal weight 500 grams (Purwoastuti and Walyani. 2015).

Based on the data, there are 20 million incidence of unsafe abortions in the world, of which 19 out of 20 million unsafe abortions (9.5%) occur in developing countries (WHO, 2011) abortion rate in Indonesia is quite high, reaching 2.4 million per year. Even according to data from the National Population and Family Planning Agency (BKKBN) of the Republic of Indonesia, there is an increase of about 15% every year, and of these 800,000 of them are carried out by young women who are still students.

The health law also provides for abortions performed by rape victims that are indicated to cause psychological trauma for the mother. If the old health law does not contain specifically about abortion against rape victims, it causes debate and interpretation in various circles. With the new health law, it is not disputed about its legal certainty because there are articles that regulate specifically.

Based on health law no. 36 of 2009, article 75 that any person is prohibited from having an abortion can be excluded based on indications of media emergencies detected from an early age of pregnancy and this rule is reinforced by Article 77 which contains the government is obliged to protect and prevent women from abortion as referred to in Article 75 regarding abortion measures that are not qualified, unsafe, and irresponsible sera contrary to religious norms and the provisions of legislation.

Abortion according to the juridical construction of laws and regulations in Indonesia is the act of aborting or shutting down the content that is done intentionally by a woman or a person who is told to do for it. A pregnant woman in this case is a woman who becomes pregnant by her Will wants to abort her womb, while the actions that, according to the Criminal Code, can be told to help with an abortion are healers, midwives or medics.

PUSATAKA OVERVIEW

Abortion in the lay sense is abortion, the exit of the results of conception or conception before the time. Abortion in Indonesian English Dictionary is translated by abortion.

In the medical sense, abortion is the termination of pregnancy with the death and expulsion of the fetus at less than 20 weeks with a fetal

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weight of less than 500 grams, that is, before the fetus can live outside the womb independently

RESEARCH METHODS

The type of research carried out in this study is normative legal research, where normative legal research is a scientific research procedure to find the truth based on scientific logic viewed from the normative side.

RESEARCH RESULTS AND DISCUSSION

A.Responsibility Of A Nurse In Participating In Abortion

One of the crimes regulated in the criminal code is the problem of criminalist abortion. The provisions regarding criminalist abortion can be seen in Chapter XIV of Book II of the criminal code on crimes against life (in particular articles 346 – 349). As for the complete formulation of the articles : Article 299: 1. Whoever deliberately treats a woman or orders her to be treated with willful notifying or causing hope, that because of the treatment the pregnant can be aborted, shall be sentenced to imprisonment for a maximum of 4 years or a maximum fine of three thousand rupiah.

B.Construction Of The Indictment Law Prepared By The Public Prosecutor In The Prosecution Of A Nurse's Criminal Liability In Participating In The Crime Of Abortion

Abortion of a child or fetus results in death for the child or fetus. Thus, any act that is violence against children especially if the violence causes the child to die, then the perpetrator shall be punished with imprisonment for a maximum of 15 (fifteen) years and/or a maximum fine of Rp.3,000,000,000.00 (three billion rupiah). It can not be denied even though in the legal setting in Indonesia abortion is a form of crime and can be punished, but the need for the practice of abortion remains high so that the practice of abortion is still done illegally or secretly.

Here is the translation of the articles on abortion in the Criminal Code :

(1) Whoever intentionally treats a woman or does any act against a woman by informing her or encouraging her hope that she may be killed, shall be sentenced to imprisonment for four years or a fine of forty-five thousand rupiah.

(2) if he does this because he expects profit, from his work or his habit of committing the crime, or if he is a physician, a midwife, or a medicine-maker, the punishment may be increased by a third.

(3) If the guilty person commits the crime in his work, then he may be deprived of the right to do the work.

A.Conclusion

From the results of this study can be obtained the following conclusions :

1. The provisions of Law No. 23 of 1992 on Health, confirms the permissibility of abortion as an attempt to save the life of the mother and or fetus, this type of abortion is legally justified and received legal protection and with medical consideration.

2. Criminal accountability for abortion is regulated in the Book of positive Criminal Law Law in Indonesia, the regulation of abortion is contained in two laws, namely the Criminal Code Article 299, 346, 347, 348, 349 and 535 which expressly prohibits abortion for any reason and in the law no. 36 of 2009 on Health article 75,76,77,78 prohibits abortion but still allows abortion on medical indications and psychological trauma with certain conditions.

B. Suggestions

1. The need for the role of the government to be active in terms of anticipating unwanted pregnancies by launching socialization programs in each place.

2. It is necessary for the role of parents to guide their children by instilling religious education as the basis of social life, providing moral education and good behavior and conducting supervision.

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Publisher : Politeknik Kesehatan Kemenkes Semarang 2022

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THE RELATION BETWEEN STUDENT BEHAVIOR WITH INCIDENCE OF PEDICULOSIS CAPITIS IN FEMALE STUDENTS AT NURUN 'ALANNUR ISLAMIC BOARDING SCHOOL, WONOSOBO REGENCY

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Abstract

The incidence of pediculosis capitis is quite high throughout the world, both in developing and developed countries. Pediculosis capitis is a disease caused by Pediculus humanus capitis or head lice that suck blood on the human head. The activity of head lice in sucking blood will have the effects such as itching, irritation, and secondary infection of the scalp. Itching will make a person uncomfortable, interfere with sleep, and affect the child's concentration in learning. Several factors that causing this incidence of pediculosis capitis are low personal hygiene and occur in a densely populated environment. The purpose of this study was to determine the relation between behavior and the incidence of pediculosis capitis in female students at the Pondok Pesantren Nurun 'Alannur, Wonosobo Regency. This research is a analytic observational study with a cross sectional approach. The lice examination was carried out using a hair comb and the behavior of the students was obtained through a questionnaire. The results showed that the incidence of pediculosis capitis in female students at the Nurun 'Alannur Islamic Boarding School, Wonosobo Regency was 141 students (74%). There was a significant relations between the behavior of washing hairs 3 times a week (p=0.030), wearing their own headscarf (p=0.000), wearing their own clothes (p=0.000), using their own hair comb (p=0.000) with the incidence of pediculosis capitis. Meanwhile, there was no significant relation between the behavior of cleaning hair combs (p=0,157), using own towels (p=0,487), changing bed sheets every 2 weeks (p=0,351), and sleeping with their own mattress (p=1,000) with the incidence of pediculosis capitis.

Keywords: female students, pediculosis capitis, student behavior

1. Introduction

Pediculosis capitis is a skin disease caused by *Pediculus humanus capitis* which is an obligate blood-sucking ectoparasite on the human head (Handoko, 2016). The activity of head lice in sucking blood will have the effects such as itching, irritation, and secondary infection of the scalp. (Yousefi et al., 2012). This disease is neglected disease because it is considered mild disease and has low mortality. However, this disease causes significant morbidity in children in the world (Lukman et al., 2018).

In general, *pediculosis capitis* will spread quickly to children who live in areas with high population density such as dormitories and orphanages (Maryanti et al., 2018). The incidence of *pediculosis capitis* is quite high throughout the world and varies in developing and developed countries. In Turkey the prevalence of *pediculosis capitis* is around 0.7-59%, in Europe 0.48-22.4%, in the UK it reaches 37.4%, in Australia

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13%, in Africa 58.9%, and America around 3.6 -61.4% (Norsiah, 2017). Several cases in Indonesia, in a research by Dandy (2021) at the Kiai Maragon Islamic boarding school in Palembang City, the prevalence of students with *pediculosis capitis* was (52.7%) (Wijaya, 2021). Meanwhile, research by Zakaria (2014), stated that the prevalence of students with pediculosis capitis at the Rhodlotul Quran Islamic boarding school in Semarang reached (59.3%) (Rahman & Malik, 2014).

One factors of *pediculosis capitis* is personal hygiene. Personal hygiene is a person's behavior in maintaining self to get physical and psychological health. Implementing personal hygiene can prevent disease, create self-beauty, and increase self-confidence (Gulgun et al., 2013). Nurun 'Alannur Islamic Boarding School is one of the Islamic boarding schools located on Jl. Sudarto Village Head, North Bugangan, Kalianget, Wonosobo Regency. Nurun 'Alannur Islamic boarding school has 190 female students. There are 6 bedrooms in this boarding school, each room can be occupied by 20, 25, and 50 students. This condition will facilitate the transmission of *Pediculus humanus capitis* among students. Most of the students also use the same stuffs so it can be the potential to spread *Pediculus humanus capitis*.

2. Method

This research method is analytic observational research with a cross-sectional approach. The sample used in this research was the total population of female students at Nurun 'Alannur Islamic Boarding School, Wonosobo Regency with a total of 190 students. The data used in this research is primary data, which is collected directly by researchers from the results of the hair comb examination and female students' behavior questionnaire. The data that has been collected was processed to determine the relation between behavior and the incidence of *pediculosis capitis* in female students at the Nurun 'Alannur Islamic Boarding School, Wonosobo Regency.

3. Results and Discussion

Univariate

The results of the examination of *pediculosis capitis* using a hair comb on female students at the Nurun 'Alannur Islamic Boarding School, Wonosobo Regency, obtained the following results:

Table 1. Examination Results of Pediculosis capitis Female Students at the Nurun 'Alanur Islamic Boarding School, Wonosobo Regency in 2022

Identification of pediculosis capitis	Total (N)	Percentage (%)
Positive Neg	141 49	74% 26%

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Total	19 0	100%

Based on table 1, it shows that the respondents who tested positive for *pediculosis capitis* were 141 students (74%), while 49 students were negative for *pediculosis capitis* (26%).

Table 2. Student Behavior at the Nurun 'Alanur Islamic Boarding School, Wonosobo Regency in 2022

Student Behavior	N	%
Wash hair 3 times a week		
No	121	63,7
Yes	69	36,3
Wear own headcraf		
No	95	50
Yes	95	50
Wear own clothes		
No	84	44,2
Yes	106	55,8
Use own hair comb		
No	85	44,7
Yes	105	55,3
Cleaning hair comb		
No	34	17,9
Yes	156	82,1
Use own towel		
No	27	14,2
Yes	163	85,8
Changes bed sheets every 2 weeks		
No	161	84,7
Yes	29	15,3
Sleep in own bed		
No	179	94,2
Yes	11	5,8

Based on research data in Table 2, the results of the behavior students showed that students who did not wash their hair 3 times a week (63.7%) were more than students who wash their hair 3 times a week (36.3%). 95 students (50%) weir their own headscarf. There were more students who wear their own clothes (55.8%) than students who did not wear their own clothes (44.2%). There are more students who use their own hair comb (55.3%) than students who did not use their own hair comb (44.7%). There were more students who cleaned hair combs (82.1%) than students who did not clean hair combs (17.9%). There are more students who use their own towels (85.8%) than students who did not use their own towels (14.2%). There are more student who did not change their bed sheets every 2 weeks (84.7%) than student who change their bed sheets every 2 weeks (15.3%). There are more students who did not sleep in their own bed (94.2%) than students who sleep in their own bed (5.8%).

Bivariate

Table 3 . The Relation Between Student Behavior With Incidence of pediculosis capitis in Female Students at Nurun 'Alannur Islamic Boarding School, Wonosobo Regency

Student Behavior	Option	Incidence of *pediculosis capitis*		Total	Statistic test
		Positif	Negatif	N	

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	No / Yes				
Wash hair 3 times a week	No / Yes	83 / 58	38 / 11	121 / 69	P = 0,030
Wear own headcraf	No / Yes	84 / 57	11 / 38	95 / 95	P = 0,000
Wear own clothes	No / Yes	74 / 67	10 / 39	84 / 106	P = 0,000
Use own hair comb	No / Yes	73 / 68	12 / 37	85 / 105	P = 0,002
Cleaning hair comb	No / Yes	29 / 112	5 / 44	34 / 156	P = 0,157
Use own towel	No / Yes	22 / 119	5 / 44	27 / 163	P = 0,487
Changes bed sheets every 2 weeks	No / Yes	122 / 19	39 / 10	161 / 29	P = 0,351
Sleep in own bed	No / Yes	133 / 8	46 / 3	179 / 11	P = 1,000

The results of the bivariate analysis regarding the relation between wash hair 3 times a week with incidence of *pediculosis capitis* in female students at the Nurun 'Alannur Islamic Boarding School, Wonosobo Regency, showed that there was a significant relation where the Chi square test results obtained p value = 0.030 (p <0.05). These results indicate that children who rarely wash their hair can develop *pediculosis capitis*. This is supported by Yulianti's research (2015), where the frequency of washing hair has a p-value = 0.000 which means that there is a relation between the frequency of washing hair with the incidence of *pediculosis capitis*. According to Layli and Sulistyo in Yulianti, et al (2015), *pediculosis capitis* is a disease of the scalp and hair, this is very detrimental to the patients but actually *pediculosis capiti*s can be prevented by increasing the frequency of washing hair 3 times a week or more.

The results of the bivariate analysis regarding the relation between using own stuffs with incidence of *pediculosis capitis* in female students at the Pondok

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Pesantren Nurun 'Alannur, Wonosobo Regency, show that there was a significant relation where the Chi square test results show that wearing own headscarf with the incidence of *pediculosis capitis* is p = 0.000. (p<0.05), wearing own clothes with the incidence of *pediculosis capitis* obtained p value = 0.000 (p<0.05), and using own hair comb with the incidence of *pediculosis capitis* obtained p value = 0.002 (p<0.05). This is supported by Lukman's research (2018), where *p-value* = 0.000, which means that there was a relation between using a own comb or own hair accessories with the incidence of *pediculosis capitis.* Based on observations by researchers on student's daily activities, it was found that borrowing stuffs from each other became a habit among students, such as headscarves, clothes, even combs and hair accessories such as headbands or hair clips that supported the indirect transmission of *Pediculus humanus* var. capitis (Dita, 2016).

The results of the bivariate analysis regarding the relation between cleaning hair comb with incidence of *pediculosis capitis* in female students at the Nurun 'Alannur Islamic Boarding School, Wonosobo Regency, showed that there was no significant relation where the Chi square test results obtained p value = 0.157 (p> 0.05). This is different from Zulinda's research (2010) where *p-value* = 0.000 which means that there was a relation between cleaning hair combs with incidence of *pediculosis capitis.* Hair combs that have never

been cleaned can cause transmission because head lice easily move from one host to another (Zulinda et al, 2010).

The results of the bivariate analysis regarding the relation between using own towels with incidence of *pediculosis capitis* in female students at the Pondok Pesantren Nurun 'Alannur, Wonosobo Regency, showed that there was no significant relation where the Chi square test results obtained p value = 0.487 (p>0.05). This is in accordance with the research of Yunida, et al (2016), that there is no relation between the factor of sharing towels with the incidence of *pediculosis capitis* where the *p-value is* 1,000 (p>0.05). According to Burkhart CN & Burkhart CG in Yunida, et al (2016), lice can also be transmitted indirectly through inanimate objects such as loose hair that carry lice to a new host or lice carried by the wind from one place to a new host. However, active lice usually survive in sclap hair. So head lice that leaving the head are close to death, and it can be argued that most lice found outside from head will not be able to infect a person or survive for long time. It is still needed the data to confirm this statement.

The results of the bivariate analysis regarding the relation between changing bed sheets every 2 weeks with incidence of *pediculosis capitis* in female students at the Nurun 'Alannur Islamic Boarding School, Wonosobo Regency, showed that there was no significant relation where the Chi square test results

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obtained p value = 0.351 (p>0.05) . This is in accordance with the research of Yunida, et al (2016), where the behavior of changing bed sheets every 2 weeks has a *p-value* = 0.268, which means that there is no relation between changing bed sheets every 2 weeks with incidence of *pediculosis capitis.* Changing and washing pillowcases (sheets) is a prevention so that head lice are not infested. In a situation where multiple infected and uninfected people are cohabiting will have minimal impact on transmission since such a small proportion of the head lice population transfers to sheets, and sheets is a hostile environment for head lice (Munusamy et al, 2014).

The results of the bivariate analysis regarding the relation between sleeping using own bed with incidence of *pediculosis capitis* in female students at the Pondok Pesantren Nurun 'Alannur, Wonosobo Regency, showed that there was no significant relation where the Chi square test results obtained p value = 1,000 (p> 0.05). The results is in accordance with the research of Yunida, et al (2016), where sleeping with the own bed has a *p-value* = 0.784, which means that there is no relation between sleeping alone with incidence of *pediculosis capitis.* However, this research contradicts to the research of Lukman, et al (2018), where the p-value = 0.000 which means that use of bed together has a significant relation with the incidence of *pediculosis capitis* directly. Sharing a bed can be a direct and indirect transmission of lice, through head-to-head contact and through sleeping equipment. According to Herlina in Nurdiani (2020),

pediculosis capitis quickly spreads in a crowded environment. This is because the dense environment, the intensity of frequent meetings among children. So this creates a habit of borrowing personal stuffs from each other when children play together.

4. Conclusion and Suggestions

Conclusion

The prevalence of pediculosis capitis among female students at the Nurun 'Alannur Islamic Boarding School, Wonosobo Regency is 78%. There was a significant relation between the behavior of washing hair 3 times a week (p=0.030), wearing own headscarf (p=0.000), wearing own clothes (p=0.000), using own hair comb (p=0.000) with incidence of *pediculosis capitis*. Meanwhile, there was no significant relation between cleaning hair combs (p = 0.157), using own towels (p = 0.487), changing bed sheets every 2 = 0.351), and sleeping with own bed (p = 1,000) with incidence of pediculosis capitis.

Suggestion

The researcher suggests that further research can add the independent variable in the relation with incidence of pediculosis capitis.

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