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THE RELATIONSHIP OF PREGNANT WOMEN WITH CHRONIC LACK OF ENERGY AND THE INCIDENT OF LOW BIRTH WEIGHT BABIE

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ABSTRACT	Keywords
Low Birth Weight is the cause of infant death in East Java. This is influenced by chronic energy deficiency which results in babies being born prematurely. The research aims to determine the relationship between chronic energy deficiency in pregnant women and the incidence of Low Birth Weight. The analytical research design uses a Retrospective Cohort using 53 samples calculated by the Slovin formula and total sampling in the technique. The data analysis used was univariate and bivariate chi-square. Getting results from 16 respondents who experienced BBLR as much as 30.2%, as many as 20 respondents who were pregnant women experienced KEK 37.7%. Based on analysis tests, it was found that half of pregnant women with KEK had a Low Birth Weight of 50.0%. Meanwhile, the results of the bivariate analysis with Chi-square obtained a p-value of 0.014 where $p < \alpha 0.05$, which states that there is a relationship between KEK pregnant women and the incidence of Low Birth Weight in PMB Cemandi. The OR value is 4.5 which states that pregnant women with CED have a 4.5 times risk of having a Low Birth Weight baby.	Low Birth Weight, Pregnant Women, KEK

INTRODUCTION

The growth and development of the fetus is influenced by consumption during pregnancy (Notoatmodjo, 2010). Lack of consumption of food and supplements as well as a lack of Blood Supplement Tablets and Provision of Additional Food for pregnant women will affect the hemoglobin levels and nutritional status of pregnant women which can cause Anemia and

Chronic Energy Deficiency. Usually, low birth weight babies which cause death compared to other low birth weight babies are caused by a lack of nutrition in the pregnant mother (Krisnawati, 2010).

The 2022 East Java Health Service report found that 18,432 pregnant women experienced chronic energy deficiency. Pregnant women who experience Chronic Energy Deficiency can experience one of

them, Low Birth Weight Babies. The reason for Chronic Energy Deficiency in pregnant women is the lack of information regarding nutrition that mothers must fulfill during pregnancy, as well as the lack of economic support which is the cause of Chronic Energy Deficiency. According to 2021 Riskesdas data, the risk of Chronic Energy Deficiency is 29.8% for pregnant women in East Java and 21.8% for non-pregnant women. Meanwhile, the national figure for Chronic Energy Shortage cases is said to exceed the national average of 28%, indicating a case of Chronic Calorie Shortage in East Java (Kemenkes RI, 2020).

According to (Ariyani, Endang Laksmining, Anis Irawati, 2012) Chronic Energy Deficiency in pregnant women causes miscarriage, anemia in babies, abortion, stillbirth in the womb, birth with low birth weight babies, dead babies, and congenital defects. Disturbances in oxygen and nutrients that affect placental function are caused by pregnant women with chronic energy deficiency. The decreased function of the placenta interferes with the growth and development of the fetus, as well as the high risk of babies being born with low birth weight (Putri, 2016).

The nutritional status of pregnant women as measured using anthropometry with Upper Arm Circumference can affect low birth weight babies. Upper Arm Circumference Measurement aims to determine the risk of a person's Chronic Energy Deficiency. If the upper arm circumference is ≤ 23.5 cm or there is a red band, then the pregnant mother will give birth to a low birth weight baby (Supariasa, 2012)

According to (Mayanda, 2017), the management that pregnant women can when there is Chronic Energy Deficiency is by providing counseling regarding good food and adequate nutrition well as storing protein and iron, fat, carbohydrates, calcium,

and vitamins, monitoring weight gain, and also monitoring the mother's upper arm circumference, Giving the mother additional food such as biscuits which contain protein and carbohydrates, Telling the mother to check at least 4 times during pregnancy so that she checks her pregnancy regularly, Giving the mother Fe tablets which must be consumed as many as 90 tablets during the pregnancy. pregnancy. (Mayanda, 2017)

METHOD

The research used was analytical research with a retrospective cohort design regarding the relationship between chronic low energy pregnant women and the incidence of LBW. A retrospective cohort study was conducted in 2 groups, a study group and a control group. These two groups were then followed continuously over a period of time to determine whether there were outcomes for people who were not exposed to the risk factors. The population of this study consisted of all pregnant women recorded in the cohort for the period January – December 2022 at TPMB Cemandi Sidoarjo, totaling 53 pregnant women. The sample used was a total sampling of 53 pregnant women

RESULTS

Table 1.1 Image of a pregnant KEK mother at TPMB Cemandi

Pregnant women	Frequency (f)	Percentage (%)
KEK	20	37,7
Not KEK	33	62,3
Total	53	100,0

Based on table 1.1, almost half of the pregnant women respondents experienced KEK, 20 respondents (37.7%).

Table 1.2 Description of LBW incidents at TPMB Cemandi

Baby's Weight	Frequency (f)	Percentage (%)
BBLR	16	30,2
Not BBLR	37	69,8
Total	53	100,0

Based on table 1.2, almost half of the respondents experienced LBW, 16 respondents (30.2%).

Table 1.3 Relationship between Pregnant Women with KEK and BBLR Incidents at PMB Cemandi

Preg nant wo men	Berat badan bayi lahir				Total		p	O R
	LBW		Not LBW					
	f	%	f	%	f	%		
KE K	1 0	50, 0 %	1 0	50, 0 %	2 0	100 ,0%	0, 01	4, 5
Not KE K	6	18, 2 %	2 7	81, 8 %	3 3	100 ,0%	4	

Based on table 1.3, it is found that half of pregnant women with CED have a low birth weight of 50.0%. After carrying out bivariate analysis using Chi square, the p-value was 0.014, where $p < \alpha 0.05$. So it was concluded that there was a relationship between KEK pregnant women and the incidence of BBLR at TPMB Cemandi. The OR value is 4.5 which states that pregnant women with KEK have a 4.5 times risk of having a BBLR bab

DISCUSSION

The upper arm circumference threshold for chronic energy deficiency in Indonesia is 23.5 cm. So pregnant women are at risk of Chronic Energy Deficiency thinking they

will give birth to a Low Birth Weight baby. Low birth weight itself carries the risk of growth disorders, chronic energy deficiency, nutritional deficiencies, and child development disorders. It is best if the mother has an upper arm circumference of less than 23.5 to postpone the birth of the baby (Notoatmodjo, 2010)

Nutrition is the most important thing in the circulation of human life. Chronic Energy Deficiency in pregnant women can cause low birth weight, prematurity, which can have an impact on low nutritional status in babies (Supariasa, 2012)

If the nutrition of a pregnant woman is poor then the fetus in the womb tends to be disturbed in its growth and tends to be at risk of giving birth to a Low Birth Weight baby due to several factors such as lack of fetal brain growth, anemia in the baby, easy infection in the baby, abortion and so on so there is a risk of giving birth to a baby. with Low Birth Weight (Supariasa, 2012)

Based on research, it was found that half of pregnant women with chronic energy deficiency had a low birth weight of 50.0%. After carrying out bivariate analysis using Chi-square, the p-value was 0.014, where $p < \alpha 0.05$. Thus, it can be concluded that there is a relationship between chronic energy deficiency in pregnant women and the incidence of low birth weight in PMB Cemandi. The OR value is 4.5 which states that pregnant women with chronic energy deficiency have a 4.5 times higher risk of giving birth to babies with low birth weight.

Fulfillment of nutrition for the fetus is carried out when the mother is pregnant. These nutrients must be balanced so that fetal development develops. According to (Pantiawati, 2010) during pregnancy, additional nutrition is very necessary such as vitamins and minerals. Later, if the nutrition you get is insufficient, the baby will have a bad impact.

The fetal growth process depends on the mother's nutrition. If the mother's nutrition is very poor, it can cause miscarriage, stillbirth, deformed babies, anemia, and low birth weight (Krisnawati, 2010).

Lack of good nutrition during pregnancy can result in abortion, low birth weight, lack of fetal brain growth, infant anemia, babies easily infected, stillbirths, and rarely causes congenital defects. Chronic malnutrition during childhood, with/without recurrent illness, will cause a stunted body shape in adulthood. Mothers who experience this condition often give birth to Low Birth Weight babies (nuryanti, 2022)

Inadequate energy and protein consumption will cause problems with low birth weight in pregnant women. So low birth weight will appear due to a reflection of nutrition during pregnancy, even before pregnancy. Later this will have an impact on death or congenital defects because low birth weight can cause brain inhibition, anemia, and infections in babies (nuryanti, 2022).

The nutritional status of pregnant women as measured using anthropometry with Upper Arm Circumference can influence Low Birth Weight. Upper Arm Circumference Measurement aims to determine the risk of a person's Chronic Energy Deficiency. If the upper arm circumference is ≤ 23.5 cm or there is a red band, then the pregnant mother will give birth to a low birth weight (Supariasa, 2012)

Risks that occur in pregnant women due to Chronic Energy Deficiency include abnormal body weight in the mother, anemia, infection, and bleeding. Meanwhile, in babies, it will cause prolonged labor, premature birth, surgery, and bleeding after delivery (Supariasa, 2012)

Chronic Energy Deficiency in pregnant women causes miscarriage, baby anemia, abortion, stillbirth, birth with Low Birth Weight, stillbirth, and congenital defects. (Mayanda, 2017) Disturbances in oxygen

and nutrients that affect placental function are caused by pregnant women with chronic energy deficiency. The decreased function of the placenta interferes with the growth and development of the fetus as well as the high risk of low birth weight babies (Putri, 2016)

CONCLUSIONS

From the results of a cohort study of pregnant women, it was found that 37% of pregnant women experienced chronic energy deficiency. Pregnant women who experience labor with newborn babies with low birth weight are 30.2%. So it can be concluded that there is a relationship between pregnant women with Chronic Energy Deficiency and Low Birth Weight in PMB Cemandi which has a p-value of 0.014 ($p < 0.05$). Chronic energy deficiency in pregnant women causes miscarriage, anemia, abortion, stillbirth, birth with low birth weight, stillbirth, and congenital defects. Disturbances in oxygen and nutrients that affect placental function are caused by pregnant women with chronic energy deficiency. The decreased function of the placenta interferes with the growth and development of the fetus, as well as the high risk of low birth weight babies.

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THE EFFECTIVENESS OF FIVE-FINGER HYPNOSIS THERAPY IN REDUCING ANXIETY IN INTRA UTERINE DEVICE TYPE ACCEPTORS

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ABSTRACT	Keywords
IUD insertion is associated with high levels of nervousness in most people, and anxiety and fear can cause discomfort during IUD insertion. Relaxation techniques are non-pharmacological techniques used to reduce anxiety and pain by tensing the muscles. Not many have applied the five-finger hypnosis relaxation technique to reduce pain in both hospitals and health institutions as a learning medium. The purpose of this study was to determine the effect of five-finger hypnosis therapy on the anxiety of prospective IUD acceptors. This study's research design is pre-experimental research with a research approach using one group pre-test and post-test. The sample in this study is 30 new IUD acceptors at the Muhammadiyah Hospital in Gresik, which is the criteria. The Wilcoxon statistical test results showed a p-value of 0.000. These results indicate a significant difference in anxiety levels before and after the intervention. The five-finger hypnosis intervention reduces the level of anxiety in new IUD acceptors.	<i>Anxiety, Five-Finger Hypnosis, IUD</i>

INTRODUCTION

Intra Uterine Device (IUD) is a contraceptive that is installed in the uterus. The IUD is a contraceptive device that has a low failure rate and can prevent pregnancy. The IUD is a method of contraception that causes the fewest complaints or problems compared to other methods (Myo and Nguyen, 2023; Asmara, 2023). The IUD can be an ideal, reliable, and reversible method for women who require long-term reversible contraception as this approach offers high

efficacy, a low expulsion rate, and a lifespan between 5 and 10 years. Several studies have investigated the main barriers to IUD insertion and concluded that fear, pain during insertion, and anxiety were the most common obstacles to its use. IUD insertion is associated with high levels of nervousness in most people, and anxiety and fear can cause discomfort during IUD insertion (Akdemir and Karadeniz, 2020; Widaryanti and Yuliani, 2024). Acceptors who have a high level of anxiety before having an IUD

installed have a higher level of pain than mothers who do not experience anxiety (Nguyen *et al.*, 2020).

Anxiety is a vague feeling of discomfort or apprehension accompanied by an autonomic response (the source is often nonspecific or unknown to the individual), a feeling of fear caused by anticipation of danger (Safitri and Tresya, 2023). Feelings of tension, worry, and fear can characterize anxiety. In addition, there are physiological changes, such as increased pulse rate, changes in respiratory rate, and changes in blood pressure. Anxiety can occur in each individual according to the situation and conditions in the surrounding environment (Amiman, Katuuk and Malara, 2019).

Relaxation techniques are non-pharmacological techniques used to reduce anxiety and pain by tensing the muscles. One method used to reduce anxiety is the five-finger hypnosis relaxation technique, which is a relaxation technique that is simple and easy for anyone to do in connection with the fingers and the flow of energy in the body. However, not many have applied the five-finger hypnosis relaxation technique to reduce pain in both hospitals and health institutions as a learning medium (Silviani *et al.*, 2021).

One of the therapies given to manage anxiety is five-finger hypnosis therapy. Five-finger hypnosis is a form of self-hypnosis that can have a high relaxation effect (Safitri and Tresya, 2023; Zainuri and Akbar, 2023; Sukmawati, Jayant and Arwidiana, 2021). Five-finger hypnosis therapy is a method of self-hypnosis disorder that can cause a relaxing effect to reduce anxiety, tension, and mental stress, thereby affecting breathing, heart rate, pulse, and blood pressure, reducing muscle tension, and increasing hormones that can cause anxiety. Memory production and hormone regulation related to stress (Pratiwi *et al.*, 2022).

Five-finger hypnosis is diverting a person's mind by touching fingers while imagining pleasant five-finger hypnosis is a general in nursing therapy where clients hypnotize themselves by thinking about pleasant experiences. The relaxation effect of five-finger hypnosis therapy is seen when respondents who are focusing on observing the shadows of their fingers show a positive response, including respondents looking calm while concentrating on seeing the shadows of moving fingers, indicating that the respondent is in a state of relaxation by utilizing the formation of natural endorphins that can reduce stress. Consequently, the individual's perception of anxiety and stress changes through accepting suggestions on the verge of subconsciousness or in a relaxed state by moving their fingers according to orders (Emilinda and Rahmawati, 2021; Asmara, 2023).

The aim of developing innovations for non-pharmacological pain management therapy is to create comfort during the IUD insertion procedure by reducing maternal anxiety and fear. The resulting feeling of comfort reduces anxiety levels so that mothers can receive services with satisfaction. Based on the description above, this study aims to determine the effect of five-finger hypnosis therapy on the anxiety of prospective IUD acceptors.

METHOD

This research uses a pre-experimental type of research with a research approach using one group pre-test and post-test. The sampling technique for this study is consecutive sampling. The population used was all patients who underwent IUD installation from August to September 2023 at the Gynecology Polyclinic at Muhammadiyah Hospital Gresik. The sample in this study consisted of 30 new IUD acceptors at the Muhammadiyah Hospital in Gresik and met

the inclusion criteria. The inclusion criteria set were new family planning acceptors from August to September 2023 and willing to participate in the research.

Each sample that will have an IUD installed is given a pre-test using the HARS questionnaire and then given five-finger hypnotherapy treatment. After the five-finger hypnotherapy is given, the sample is measured post-test using the HARS questionnaire, and then the IUD is installed. The data collected was in the form of HARS questionnaire scores before and after the sample received five-finger therapy. Data analysis was performed using the non-parametric Wilcoxon sign rank test. Statistical test calculations using SPSS calculations.

RESULTS

Table 1. Distribution of Anxiety in IUD Acceptors Before and After Receiving Five-Finger Hypnosis

Scale	Before		After	
	n	Percentage	n	Percentage
Not anxious	3	10%	6	20%
Mild anxiety	5	17%	15	50%
Moderate anxiety	9	30%	7	23%
Very worried	13	43%	2	7%
Panic	0	0%	0	0%

Table 1. shows that the majority of new IUD acceptors experienced severe anxiety before five-finger hypnosis was carried out. There was a change in the percentage after the acceptors received five-finger hypnosis therapy. Most new IUD acceptors experience mild anxiety after five-finger hypnosis. There was a change in the level of anxiety of new IUD acceptors from severe anxiety to mild anxiety in the majority of the sample.

Table 2. Anxiety Descriptive Analysis Test results of IUD Acceptors Before and After Receiving Five-Finger

Hypnosis				
Group	Min	Max	Mean	SD
Before	13	46	24.6	7.68
After	8	38	17.73	6.62

In the group before treatment, the lowest questionnaire point results were 13, and the highest points were 46, with the average questionnaire points in the group before treatment being 24.6, which was in the moderate anxiety level category. In the group after treatment, the lowest points were 8, and the highest points were 38, with average points from 30 subjects of 17,733, which were included in the mild category.

Table 3. Analysis result of Wilcoxon test on the Effect of Five Finger Hypnosis Therapy on IUD Acceptors

Group	n	P-Value
Before	30	0.000
After	30	

The Wilcoxon statistical test results showed a p-value of 0.000. These results indicate a significant difference in anxiety levels before and after the intervention. The five-finger hypnosis intervention reduces the level of anxiety in new IUD acceptors.

DISCUSSION

The majority of new IUD acceptors experienced severe anxiety before five-finger hypnosis was carried out. There was a change in the percentage after the acceptors received five-finger hypnosis therapy. Positive changes in respondents can be seen in the difference in scores before and after which decreased overall. This can be seen in each score before and after decreasing. Subjects experienced changes in scores that decreased significantly so that they

experienced a decrease in anxiety on the administration of five-finger therapy. Researchers believe that five-finger therapy can have an effect on reducing anxiety. Acceptors who have a high level of anxiety before having an IUD installed have a higher level of pain than mothers who do not experience anxiety (Nguyen *et al.*, 2020). Negative emotions correlate with higher perceived pain and negative mood, possibly by altering the experience of pain through greater activation of neurocircuits (in the inferior frontal gyrus and amygdala), which are associated with pain-induced changes in emotion regulatory mechanisms. The presence of negative perceptions about IUDs, a previous negative history of painful vaginal procedures, or a history of painful vaginal examinations may contribute to user anxiety (Akdemir and Karadeniz, 2020).

The results of statistical tests showed that five-finger hypnosis given to IUD acceptors was able to reduce the level of anxiety felt by the acceptors. These results are in accordance with other research that examined the effect of five-finger hypnosis on reducing anxiety levels. Various subjects have been given five-finger hypnosis therapy, including hypertension patients (Dewi *et al.*, 2023), families of patients being treated in the emergency room (Zainuri and Akbar, 2023), rheumatoid arthritis patients (Dewi, Nurani, *et al.*, 2022), stroke patients (Dewi *et al.*, 2024), and breast cancer patients (Dewi, Panduragan, *et al.*, 2022), with consistent results in reducing anxiety.

The five-finger relaxation technique helps the patients reduce anxiety, as it is a form of self-hypnosis that affects the limbic system or structures in the brain related to emotions, thereby affecting the release of hormones that stimulate anxiety so that it will be reduced (Dewi, Panduragan, *et al.*, 2022). Relaxation techniques, distraction, spiritual activities, and

hypnotherapy can overcome anxiety. Five-finger hypnosis therapy is a relaxation therapy using the method of imagery or imagination that uses a tool in the form of five-fingers. The purpose of doing this five-fingers hypnosis therapy is to provide a sense of comfort, improve blood circulation and relax the muscles of the body so that the condition of the body becomes more comfortable. With a comfortable body condition, it is expected that one's mind will become more relaxed so that feelings of fear and worry that arise can disappear slowly (Emilinda and Rahmawati, 2021).

Five-finger hypnosis therapy has a significant influence on reducing anxiety in IUD acceptors because by carrying out this therapy, IUD acceptors gain inner calm and relax, so anxiety levels decrease.

Further research is needed to explore the mechanisms underlying the calming effects of five-finger hypnosis therapy as well as the long-term effects on mental health of IUD acceptors. Investigating the possibility of combining these therapies and their synergistic effects may provide a more comprehensive understanding of their effectiveness and safety. Ultimately, our understanding of this holistic approach to contraceptive care contributes to improving treatment outcomes in IUD acceptors patients.

CONCLUSIONS

There is a difference in anxiety levels before and after receiving non-pharmacological therapy in the form of five-finger hypnosis intervention. Anxiety levels cause an increase in pain scores in IUD acceptors, therefore it is important to carry out anxiety management before IUD installation to increase comfort in IUD

installation so that it is expected to increase the scope of IUD contraception use.

Non-pharmacological therapy in the form of five-finger hypnosis intervention has been proven to reduce anxiety in prospective IUD acceptors, so it is expected to be applied as an alternative to reduce anxiety so that it can reduce pain scores during IUD installation.

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ANALYSIS OF THE INFLUENCE OF ORGANIZATIONAL TRUST, WORK ENVIRONMENT, AND SOCIAL CAPITAL ON THE PERFORMANCE OF EXCLUSIVE BREASTFEEDING PROGRAM AT THE SURABAYA CITY HEALTH CENTER

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ABSTRACT	Keywords
The Surabaya City Health Center's exclusive breastfeeding program has not met its 72.5% target from 2018-2021. A study analyzing the impact of organizational trust, work environment, and social capital on the program's performance revealed that most factors were unfavorable. The study found that trust, work environment, and social capital significantly impacted the process performance of the breast milk work team. The study concluded that these factors significantly impacted the achievement of the exclusive breastfeeding program. To improve the program's success, the Health Office suggested training breast milk counselors for the team and evaluating the consolidation mechanism. The Community Health Center also distributed tasks evenly, awarded the team, and proposed a budget for funding program activities. The findings highlight the need for improved support for exclusive breastfeeding programs in Surabaya.	Organizational Trust, Work Environment, Social Capital, Performance, Exclusive Breast Feeding

INTRODUCTION

One of the efforts that can be made to achieve nutritional status is to start by realizing the golden period, namely during infancy and childhood, during this period is a period that requires appropriate nutritional intake so that it is expected to grow and develop optimally (Marlina, 2021). According to the UNICEF Conceptual Framework (2021), there are 3

main factors that cause malnutrition in children under five, namely unbalanced food intake, low birth weight (LBW) and history of illness.

According to WHO (2017), the average rate of exclusive breastfeeding in the world is around 38%. In Indonesia, although 96% of women breastfeed their children, only 42% of babies under 6 months of age receive exclusive breast milk (Indonesian Ministry of Health, 2018). In

2018-2021, the Indonesian Central Bureau of Statistics stated that the achievement of exclusive breastfeeding still had not reached the national target of 80% with successive achievements of 44.4%, 66.7%, 69.9% and 71.6% (BPS RI, 2021).

East Java Province for the last 4 years 2018-2021 based on reports from the Central Statistics Agency, the percentage of babies aged less than 6 months who received exclusive breast milk was 40.8%, 68.7%, 66.9% and 69.6% in 2021 (Central Statistics Agency, 2021).

METHODS

This research is an observational survey research, that is, data or information is collected without intervention or treatment on the population. This type of research is quantitative research that uses questionnaires to measure the variables studied. The design of this research is cross sectional, that is, data collection is carried out once at a certain time period and simultaneously on the variables studied.

Research data collection began from January to August 2023. The research location was carried out at the Surabaya City Regional Health Center.

Primary data collection is carried out through interviews and questionnaires that have been provided, where the research instruments are tested first so that they have validity and reliability in accordance with the requirements of the research instruments that have been determined and then analyzed statistically. The trial was carried out on 20 ASI work teams at the Surabaya City Health Center. The list of 20 community health centers that were sampled in the validity and reliability test were Peneleh, Gayungan, Siwalankerto, Jemursari, Keputih, Bangkingan, Pakis, Ketabang, Simolawang, Tanjungsari, Wall Dukuh, Made, Jagir, Benowo, Sawahan, Jeruk, Dupak, Lontar, Wiyung, Tambakrejo. Validity test by

calculating Pearson correlation and reliability test using Cronbach's alpha.

Secondary data collection on the achievements of the exclusive breastfeeding program was carried out using the Surabaya City Health Service Report for 2021 and 2023.

RESULTS

The Influence of Organizational Trust, Work Environment, Social Capital on Process Performance of the ASI Work Team at Surabaya City Health Centers in 2023

Environment and social capital on the process performance of the ASI work team at the Surabaya City Health Center.

Table 1. The Influence of Organizational Trust, Work Environment, Social Capital on the Process Performance of the Breastfeeding Work Team in the Exclusive Breastfeeding Program at the Surabaya City Health Center

N	Indepen den Variabel	Depende n Variabel	β	p	R - Squ are	Inform ation
1	<i>Organiz ational Trust</i>	ASI Work Team	0,5 61	0, 01 3	0,72 9	Influent ial
2	<i>Work Environ ment</i>	Process Perfor mance	0,2 49	0, 03 6		Influent ial
3	<i>Social Capital</i>		0,5 88	0, 00 0		Influent ial

The research results show that organizational trust, work environment, and social capital have a significant effect on the process performance of the ASI work team. The significance value of the three variables obtained is organizational trust of 0.013 ($p < 0.05$), work environment of 0.036 ($p < 0.05$) and social capital of 0.000 ($p < 0.05$). Apart

from that, from input performance to process performance we can also see the overall influence of input performance to output. The influence of the performance of the ASI work team process on the achievements of the exclusive breastfeeding program at the Surabaya City Health Center.

Table 2. The Influence of Organizational Trust, Work Environment, Social Capital on Process

No	Independent Variabel	Dependent Variabel	β	p	Information
1	Team Process Performance	Giving program Achievements breast milk	1,957	0,011	Influential

The research results show that the process performance of the ASI work team has a significant effect on the achievements of the exclusive breastfeeding program. The significance value obtained was 0.011 ($p < 0.05$).

Determining Strategic Research Issues

Strategic issues are research results that have a (significant) influence with $p < 0.05$ and are based on variables with values in the categories very bad and bad, weak and very weak, and very bad and not good $> 20\%$. From the results of this research, we then look for the most crucial dimensions to be handled for each variable.

DISCUSSION

Organizational Trust ASI Work Team

The research results show that 17 of the 35 Community Health Centers in Surabaya City on the organizational trust variable are still in the very poor and poor categories. This is due to problems in giving awards which the ASI work team has not yet achieved when achieving its best performance.

According to Syafiq (2021) states that awards are a form of recognition for certain achievements given in material or non-material form given by organizations or institutions to individuals or teams so that they can work with high motivation and can achieve the desired goals.

Apart from the 2 dimensions that influence organizational trust in the bad category, there are 3 dimensions that make organizational trust in the Community Health Center have a good category, namely openness and honesty, reliability and identification. Openness and honesty explains the openness and honesty of the Community Health Center to be able to provide information regarding decisions in implementing the exclusive breastfeeding program. Honesty in providing information provided by the Puskesmas management and the ASI work team is in the good category. This is because the Puskesmas management can easily communicate with the ASI work team if there are problems regarding the ASI feeding program.

One form of increasing competency can be done by organizing training as a breastfeeding counselor. However, increasing training competency as a breastfeeding counselor requires quite large funds and a long time. So not all of the ASI work team received this training due to limited funds and time.

Work Environment ASI work Team

This is supported by Tongun (2019) who states that training is an effective way to improve the competence of health workers and is reinforced by Kowara (2020) who states that the low achievement of breastfeeding is caused by a lack of competence of health workers in providing breastfeeding care. This is caused by the lack of opportunities for health workers to receive refresher training ASI support practices, apart from the large amount of

funds for training, the training period is also very long, so it is difficult for institutions to provide training permits for officers because the organization is very short of officers. So from the explanation above, it is hoped that the Surabaya City Health Service can propose training for breast milk counselors to the East Java Provincial Health Service, the Ministry of Health and several organizations providing breast milk counselor training, namely the Indonesian Lactation Center Foundation (SELASI), the Indonesian Perinatology Association (PERINASIA), the Association of Breastfeeding Mothers. Indonesia (AIMI) to be able to provide training as ASI counselors to health workers in a less time consuming, more affordable and simpler manner, so that the training can be attended by the entire ASI work team without setting a quota.

This is in line with research conducted by Dahlius (2016) which states that work facilities are tools that can be used by employees to complete one or several jobs that are their responsibility. The existence of adequate and complete facilities can be an incentive for workers because it can lighten their workload. With the availability of work facilities in the form of complete work support facilities and infrastructure, employees tend to have high work enthusiasm in carrying out the work assigned to them. The implications of these conditions will be optimal employee performance and support smooth work. Unsupportive work facilities can also affect a person's work atmosphere so that it can affect their performance (Sesunan and Basit, 2013).

This also happened at the Mabelopura Community Health Center, Palu City in research by Hermiyanty (2017) which stated that more than 50% of health workers at the Community Health Center considered that the available working environment conditions were not able to

support the work activities they carried out. Apart from that, it also has a negative impact on the performance of employees at the Community Health Center. The Head of the Community Health Center who experienced this stated that if there were infrastructure facilities that were experiencing problems and needed to be repaired, the purchase would be carried out in consolidation first. This is reinforced by the results of the FGD that has been carried out that the cause of the problems that occur at the Community Health Center is that the Community Health Center is already a BLUD but if there are infrastructure facilities that experience problems and must be repaired, they are purchased by consolidation first, while the consolidation must go through a mechanism/flow that is in accordance with the provisions. So these provisions create obstacles, namely the time is longer and you have to wait longer.

Social Capital ASI Work Team

The results of this research show that social capital in 17 of the 35 Community Health Centers in Surabaya City is still in the very weak and weak category. This is due to the lack of communication problems developed by the ASI work team in distributing the workload unevenly at the Community Health Center. The ASI work team consists of nutrition officers, health promotion officers, coordinating midwives, sub-district midwives and doctors in charge of MCH. So if there is a problem in unequal distribution of the workload, it can cause weak trust within the team. This is reinforced by the results of the FGDs that have been carried out, that the cause of trust problems that occur in several Community Health Centers is that there is still no single vision and mission or one voice. If I do this it will affect others. So there are still those who work individually and don't have the same targets.

This is reinforced by Burton and Obel (2018) who state that the suitability between the structure of the division of tasks in the organization and its coordination must be determined beforehand or how to make these tasks work together so that the expected organizational performance can be realized. For this reason, each division or level of position should be equipped with a clear job description with authority and responsibility in accordance with organizational standards. Having a job description will facilitate the coordination process between members of the organization which creates work harmony so that there is no confusion and overlapping of work.

According to Presidential Regulation no. 72 of 2021 concerning the Acceleration of Reducing Stunting states that exclusive breastfeeding is one of the efforts that can reduce stunting. So it is hoped that with this, coordination can be carried out again with relations outside the Community Health Center to make the exclusive breastfeeding program also a form of program in an effort to reduce stunting. This is reinforced by Nainggolan, Johannes and Rosita, (2022) who state that one of the problems when organizing is a lack of coordination in work programs. Good performance can be seen if those in the organization coordinate with each other. If they cannot coordinate with each other, it can have a negative impact on members in the organization.

ASI Work Team Process Performance

Performance is a work behavior or work result that can be achieved by a person both in quality and quantity in an organization over a certain period of time in accordance with carrying out the duties and responsibilities given. Program performance is related to the extent to which the activities in the program have been implemented so

that they can achieve the objectives of the program.

The community needs an exclusive breastfeeding program, but there are many incorrect perceptions about breastfeeding. As an effort to increase the attainment of exclusive breastfeeding, the Community Health Center carries out work to increase the attainment of breastfeeding in order to prevent stunting. The form of performance carried out by the ASI work team at the Community Health Center is process performance. The performance of the ASI work team process carried out in the exclusive breastfeeding program includes breastfeeding counseling services, assistance with breastfeeding, providing breast milk cooking demonstrations and monitoring and home visits.

The results of this research show that the process performance at 20 of the 35 Community Health Centers in the City of Surabaya is still not running well. This is due to problems in monitoring and home visits. The ASI work team in carrying out monitoring activities and house visits is rarely successful because there is a Puskesmas work area with elite housing. This is difficult to do because when the ASI work team knocks on the door it is difficult to open and enter, besides that from year to year monitoring activities and home visits cannot be carried out because they cannot be knocked.

As an effort to carry out monitoring activities and house visits, the Community Health Center implemented a strategy that the ASI work team would collaborate with KSH (Great Surabaya Cadres) to knock on houses that could not be reached. This is supported by Ronoatmodjo (2009) who states that home visits that are hampered by health facility services can be carried out with assignments adjusted to the availability of officers. If there are no or insufficient health workers and cannot carry

out this strategy, involve community workers or other colleagues.

The second largest percentage that supports the process performance is still not running well is the provision of breast milk cooking demonstrations. There is still a breastfeeding work team at the Surabaya City Health Center that has not carried out program activities in the form of cooking demonstrations to increase breast milk intake. The program providing cooking demonstrations consists of innovative activities, namely planting Moringa leaf plants which are useful for increasing breast milk intake.

Apart from the two dimensions that make the process performance run poorly, there are two other dimensions that make the process performance run well, namely breastfeeding counseling services and assistance with breastfeeding. Breastfeeding counseling services are always carried out by the ASI work team when mothers come to the Community Health Center or when providing counseling outside the Community Health Center, namely by providing information to mothers regarding exclusive breastfeeding. Apart from that, providing information on how to care for the breasts to mothers so that breast milk remains smooth, the breasts do not become blocked, and always provides encouragement and motivation to mothers to provide exclusive breastfeeding. According to Anita (2017) states that one of the efforts to increase exclusive breastfeeding can be done through promotional activities by providing counseling or counseling from an early age. Apart from that, the intensity of counseling is also a factor that influences the increase in mothers' knowledge of Get information that can support exclusive breastfeeding. Apart from breastfeeding counseling services, assistance with breastfeeding is also really needed by

mothers on how to breastfeed properly and correctly.

Achievements of the Exclusive Breastfeeding Program

The achievements of the exclusive breastfeeding program at the Surabaya City Health Center still do not meet the standards set at 77.1% compared to the standards set by the Ministry of Health at 80%. The results of the exclusive breastfeeding program are based on 4 assessment categories, namely very high (90-100%), high (80-89.9%), medium (65-79.9%) and low (<65%).

The research results showed that 13 of the 35 Community Health Centers in Surabaya City had low achievement. The achievements obtained by the 13 Community Health Centers were due to the process performance carried out by the ASI work team not running optimally. Apart from that, it is also influenced by the work area of the Community Health Center which has maternal factors such as inadequate knowledge, culture, attitudes and family support, so that this supports the target not being achieved in accordance with the established standards. This is supported by research by Sinaga and Siregar, (2020) which states that there are several factors that can cause the achievement of exclusive breastfeeding to be low, namely the absence of family support, the absence of assistance from health workers, the mother's low knowledge and attitudes, and culture that has been passed down from generation to generation. Low coverage of breastfeeding is a threat to children's growth and development which will affect the growth and development of the quality of Human Resources (HR) in general because 80% of a child's brain development begins when they are still in the womb until the age of 3 years, which is known as the golden period (Kurniawan, 2013).

The Influence of Organizational Trust, Work Environment, and Social Capital on the Process Performance of the ASI Work Team at the Surabaya City Health Center

The results of the research that has been conducted show that organizational trust has an influence on the process performance of the ASI work team at the Surabaya Community Health Center. This explains that changes in the level of trust of the organization, namely the Surabaya City Health Center, towards the ASI work team can have an impact on the process performance of the ASI work team in the exclusive breastfeeding program.

Setiawan et al., (2016) also explained that trust given by an organization can directly have an impact on improving performance. The trust given by an organization to individuals or groups can provide optimal services in accordance with the goals to be achieved (Singh and Desa, 2018).

Several other studies state that a company needs to provide an appropriate and comfortable work environment according to the needs of workers in order to reduce the stress level of workers in completing work, so that the resulting performance can also be maximized and show improvement for the better (Hamid, 2015). Apart from that, Jayaweera (2015) also stated that workers can work more optimally when providing the working environment and conditions and providing work facilities that support employee performance.

CONCLUSION

Conclusions that can be drawn based on the results of the research that has been carried out are as follows:

1. Organizational Trust in the ASI work team is mostly in the poor category. Based

on the organizational trust dimension, the ASI work team at the Community Health Center has good openness and honesty, reliability and identification, while competence and concern for employees are still not good.

2. The work environment in the ASI work team is mostly in the bad category. Based on the work environment dimension, the ASI work team at the Community Health Center has good relationships with colleagues, while the working atmosphere and availability of work facilities are still not good.

3. Social Capital in the ASI work team is mostly in the weak category. Based on the social capital dimension, the ASI work team at the Community Health Center has reciprocity and mutuality, shared norms of behavior and a strong sense of commitment and belonging, while trust and social networks are still weak.

4. Most of the ASI work team's process performance is still not going well. Based on the process performance dimensions, the ASI work team at the Community Health Center has good breastfeeding counseling services and breastfeeding assistance, while providing breast milk cooking demonstrations and monitoring and home visits are still not good.

5. The achievement of the exclusive breastfeeding program at the Surabaya City Health Center in the first quarter of 2023 was 37.1%, still below the Ministry of Health's standards.

6. Organizational trust, work environment, and social capital influence the process performance of the ASI work team in achieving the achievements of the exclusive breastfeeding program at the Surabaya City Health Center.

7. The performance of the ASI work team process influences the achievements of the exclusive breastfeeding program at the Surabaya City Health Center.

8. Recommendations for increasing the achievements of the exclusive breastfeeding program for the ASI work team at the Surabaya City Health Center, namely:

a. For the Health Service: Training of ASI counselors for Puskesmas ASI work teams who are not yet ASI counselors, evaluating the tool consolidation mechanism by ensuring that the tool mechanism process can be faster.

b. For Puskesmas: Dividing the workload evenly among all members of the ASI work team, giving awards to the ASI work team, forming a strategy for monitoring activities and home visits with KSH so that they can reach all Puskesmas work areas, and procuring a budget for exclusive breastfeeding program activities at the Puskesmas.

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THE USE OF DIGITAL COMICS IN TORNADO MITIGATION FOR ELEMENTARY SCHOOL STUDENTS

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ABSTRACT	Keywords
Children are a vulnerable group in the face of disasters due to their age and limited knowledge. This study aims to analyze the impact of digital comic education on the preparedness of elementary school students in facing tornado disasters. The study was conducted using a quasi-experimental pre-test post-test with control group design on 90 elementary school students (46 in the intervention group and 44 in the control group). The intervention group received digital comics education (PDF), while the control group received education using PowerPoint media. Preparedness was measured using a questionnaire and tested using a paired t-test ($\alpha \leq 0.05$). The results showed that 84.8% of elementary school students were in the less prepared category before intervention and increased to nearly prepared at 69.6% and prepared at 28.3% after education using digital comics. There was an impact of both digital comic and PowerPoint media education on increasing the preparedness of elementary school students ($p=0.001$; $p=0.001$) with an average mean increase of 11.46 and 7.89, respectively. There was a difference in post-test preparedness between the control and intervention groups ($p=0.019$). Digital comics proved to be more effective in increasing the preparedness of elementary school students in facing tornado disasters compared to PowerPoint media	Digital-comics, disaster, preparedness

INTRODUCTION

Preparedness is an action taken during the pre-disaster phase (before the disaster occurs). The purpose of disaster preparedness is to reduce the risks (impacts) caused by a disaster (Widjanarko & Minnafiah, 2018). The research results indicate that the level of preparedness among elementary and Islamic

elementary school students in Karanganyar Regency is still low. This suggests that disaster knowledge has not been adequately conveyed to students in schools. Most students have never participated in training or socialization about tornado disasters. (Hadiyati & Hafida, 2018).

The National Disaster Management Agency (BNPB) recorded 2,627 natural disasters throughout 2023 (January - November 2023). The most dominant disasters were forest and land fires, followed by landslides, floods, and tornadoes. There were 1,616 incidents of forest and land fires, 340 landslides, 307 floods, and 292 tornadoes. The provinces contributing the highest number of incidents were Bali and Nusa Tenggara with 394 incidents, Sulawesi with 109 incidents, and Maluku with 87 incidents. According to the 2023 Indonesian Disaster Information Data, Sumatra ranks first in the number of tornado incidents, with 143 incidents, followed by Java with 103 incidents, and Sulawesi with 35 incidents. In Java, East Java Province had the highest number of tornado incidents compared to other provinces in Java, with 75 incidents. (BNPB, 2023). The Disaster Information Data of Indonesia (2023) records 7 natural disaster incidents in Lamongan Regency from January to November 2023. The predominant disasters were drought, occurring 4 times, followed by tornadoes with 3 incidents, resulting in damage to 14 houses and 1 school (BNPB, 2023).

Education can be conducted through several methods, including counseling, games, and the use of print media such as posters, leaflets, booklets, comics, and electronic media such as animated videos. The use of media in health education is crucial to support learning. Educational media can provide enjoyable experiences and cater to the needs of students, as each student has different abilities. Using media as a learning tool can make learning more effective, efficient, and engaging. (Andani, 2023).

Several educational methods have been implemented to enhance knowledge and preparedness among elementary school students, including crossword puzzle games focused on disaster preparedness knowledge

for elementary school students (Rahayuni et al., 2022). Puzzle games are effective in enhancing disaster preparedness knowledge among students at MI Fathul Ulum Sirau (Kholisoh & Aprilina, 2023). Both audiovisual methods and role-playing can influence disaster preparedness behavior in children (Sari & Suciana, 2019). The use of the disaster preparedness comic book “Komik Siaga Bencana (KOSIBA)” has an impact on flood knowledge and preparedness among students at MI Muhammadiyah Mujur Lor (Utami et al., 2022). The use of tablet media influences the knowledge and preparedness of elementary school students regarding flood disasters (Safitri, 2022). The provision of education through animated videos and simulations has an impact on disaster knowledge and preparedness among students at SDN Trucuk 1, Trucuk District, Bojonegoro Regency (Rahayu, 2021).

Based on the results of several studies mentioned above, there has been no research yet utilizing digital comic media as a disaster mitigation education tool. Therefore, the researchers are interested in employing digital comics as a medium for disaster mitigation education. The reason for choosing digital comic media is because it offers a different reading experience compared to printed comics. Considering that Millennials and Generation Z prefer using technology and gadgets in their daily lives, digital comics can potentially resonate more effectively with these generations.

Research carried out by Lazuardi & Kristiawan (2022) has been shown that children have increasingly been exposed to and become addicted to gadgets during the COVID-19 pandemic, as the government implemented Work From Home (WFH) policies to prevent and protect the public from virus transmission. As a result, educators and students were required to engage in online learning, leading students to rely more on gadgets than physical books.

Digital comics excel in terms of convenience in how they are read and are more economical compared to purchasing printed comics sold in bookstores (Ramadhan & Rasuardie, 2020). The use of digital comic media can create more active, creative, and innovative learning experiences, making the conveyed material easily understandable for students. This combination is expected to foster a serious learning environment while incorporating engaging visuals that keep students interested and prevent them from feeling bored or sleepy during the learning process (Narestuti et al., 2021). The research aims to analyze the influence of education using digital comic methods on elementary school students' preparedness in facing tornado disasters.

METHOD

This study was a quantitative research with a quasi-experiment two group pre-test post-test with control group design. The research was conducted at Dlanggu Elementary School, Deket District, Lamongan Regency on April 15, 2024. The population of the study consisted of 100 elementary school students in grades 4, 5, and 6. The sample size was also 100 students who meet the inclusion and exclusion criteria.

The inclusion criteria included elementary school students aged 10-12 years (grades 4, 5, and 6), who had an Android smartphone and were part of a WhatsApp group, and are willing to participate as respondents. The exclusion criteria were students aged < 10 years and/or absent during the research. The entire sample was selected using total sampling technique from the total population of students in grades 4, 5, and 6, and then divided into two groups using cluster random sampling, with 46 students in the treatment group and 44 students in the control group.

The research instrument was using digital comics (in PDF format) created by the research team, consisting of cartoon images and text about tornado disaster preparedness, structured based on references from BPBD Denpasar and BPBD NTB, and has been registered with EC00202452057 Intellectual Property Rights on June 20, 2024.

The research instrument was a questionnaire on students' preparedness in facing tornado disasters, comprising 15 closed-ended questions with Likert scale responses ranging from 1 to 5, in which 1= unprepared, 2= less prepared, 3= almost prepared, 4 = prepared, and 5 = very prepared. This questionnaire was developed by the research team, referencing three parameters of tornado disaster preparedness from LIPI-UNESCO/ISDR (2006): knowledge, attitude, and emergency response planning.

The validity of the questionnaire was tested with 30 elementary school students from SDN Durikulon, Durikulon Village, Laren District, Lamongan, showing that the questionnaire was valid with a calculated r ranging from 0.424 to 0.655 (r calculated > r table 0.374). The reliability was also confirmed with a Cronbach's alpha value of 0.798 (α > 0.60), indicating high internal consistency.

Before conducting the research, ethical approval for this study was obtained from the Ethics Committee of Muhammadiyah University Lamongan on April 9, 2024, with reference number 050/EC/KEPK – S1/04/2024.

Data collection was carried out by requesting information from students in grades 4, 5, and 6 at SDN Dlanggu who met the inclusion and exclusion criteria. Subsequently, students' data were randomized to determine their allocation into the intervention and control groups in a 50-50 ratio, based on odd and even numbers.

The research team then established a time contract with the school principal for the schedule of educational sessions. Informed consent was obtained from the students who agreed to participate, and they were asked to sign a consent form. The research was conducted over one day, from morning to afternoon, divided into 3 sessions. Five research assistants were involved to oversee and distribute the questionnaires to the respondents.

The first session was conducted with the intervention group, while the second and third sessions were with the control group. After distributing the pre-test, the intervention group received education through a digital comic about tornadoes distributed as a PDF via WhatsApp groups. Students were given 15 minutes to read and were guided to open the comic page by page (totaling 9 pages). Similarly, the control group received education through a PowerPoint presentation for 15 minutes, followed by closing with a post-test.

Before conducting statistical tests, the normality of the data was assessed using the Shapiro-Wilk test, which indicated a normal distribution of data ($p = 0.124 - 0.608$). Subsequently, paired t-tests were conducted to measure the effect of students' preparedness before and after the intervention in both the treatment and control groups. An independent t-test was then performed to compare preparedness between the intervention and control groups.

RESULTS

Total sample size involved in the study was 90 students, comprising 46 in the intervention group and 44 in the control group. During data collection, 10 students were absent without explanation, with 4 students from the intervention group and 6 students from the control group.

Table 1. Respondent Demographic Data (n=90)

Variable		Intervention		Control	
		N	%	N	%
Gender	Female	27	58.7	27	61.4
	Male	19	41.3	17	38.6
	Total	46	100.0	44	100.0
Age (y/o)	10	17	37.0	15	34.1
	11	9	19.6	10	22.7
	12	20	43.5	19	43.2
	Total	46	100.0	44	100.0
Class	4A	10	37.0	0	0
	4B	0	0	15	34.1
	5	9	19.6	10	22.7
	6A	20	43.5	0	0
	6B	0	0	19	43.2
	Total	46	100.0	44	100.0

Based on Table 1, respondents in both intervention and control groups are predominantly female (58.7% and 61.4%, respectively) and mostly aged 12 years (43.5% and 43.2%, respectively).

Table 2. Student preparedness in dealing with tornado disasters before and after intervention

Group	Preparedness	Pre-test		Post-test	
		N	%	N	%
Intervention	Unprepared	0	0	0	0
	Less prepared	39	84.8	1	2.2
	Almost prepared	7	15.2	3	6.9
	Prepared	0	0	13	28.3
	Very prepared	0	0	0	0
	Total	46	100.0	46	100.0
Control	Unprepared	1	2.3	1	2.3
	Less prepared	35	79.5	10	22.7
	Almost prepared	8	18.2	21	47.7
	Prepared	0	0	12	27.3
	Very prepared	0	0	0	0
	Total	44	100.0	44	100.0

Based on Table 2, the preparedness levels in the intervention group before receiving education is 84.8% categorized as less prepared, which decreased to 2.2% after the education. Meanwhile, 15.2% of students categorized as almost prepared

before education increased to 69.6% after education.

In the control group, 79.5% of students were categorized as less prepared before education, decreasing to 22.7% after education. Additionally, 18.2% of students categorized as almost prepared before education increased to 47.7% after education. There was one student in the control group, a 10-year-old 4th grader, who remained categorized as not prepared in both the pre-test and post-test.

Table 3. Statistical Analysis of the Effect of Comic and Power Point Education on Student Preparedness

Group		N	Min-Max	Mean±SD	p
Intervention	Pretest	4	42	50.41±	0.0
		6	-	4.096	00
			63		
	Posttest	4	52	61.87±	
6		-	5.093		
			72		
Control	Pretest	4	39	50.52±	0.0
		4	-	5.210	00
			60		
	Posttest	4	39	58.41±	
		4	-	8.331	
			75		

The results of the paired t-test indicate significant impacts on preparedness before and after education using digital comics ($p=0.000$), with a mean difference of 11.46. Similarly, there was a significant effect on preparedness before and after education using PowerPoint media ($p=0.000$), with a mean difference of 7.86.

Table 4. Comparison of Student Preparedness between Intervention Group and Control Group (n=90)

Group	N	Mean±SD	p
Pre (Intervention)	46	50.41±4.096	0.912
Pre (Control)	44	50.52±5.210	
Post (Intervention)	46	61.87±5.093	0.019
Post (Control)	44	58.41±8.331	

The results of the independent t-test indicate that there was no significant difference in preparedness between the intervention and control groups before education ($p=0.912$ or $p>0.05$). However, there was a significant difference in preparedness between the intervention and $p<0.05$), with a mean difference of 3.46.

DISCUSSION

The research findings indicate that providing education using digital comics has proven effective in enhancing students' preparedness for facing the tornado disaster. There was an average mean increase of 11.46 points (from 50.41 to 61.87) among the intervention group receiving this education, demonstrating the efficacy of this method. Compared to the control group receiving education through PowerPoint presentations, the comic-based approach was deemed more effective in imparting understanding and readiness for the specific disaster. These findings are consistent with previous research (Andani, 2023) which shows the influence of providing comic book education on the preparedness for tornado disaster among elementary school students, with an average mean increase of 2.57 points (from 4.67 to 7.27).

Preparedness involves a series of disaster risk reduction activities aimed at anticipating disasters through organization and effective and efficient measures.

Insufficient preparedness can be attributed to students' lack of knowledge about disasters due to the absence of disaster awareness sessions or education in schools. Many schools still lack a curriculum specifically addressing disaster risk reduction materials (Rahayuni et al., 2022).

One effort to enhance students' knowledge and preparedness in facing disasters is through education. Education can be delivered through various methods such as lectures using leaflets, PowerPoint presentations (PPT), and gaming media like tabletop exercises, comics, *Sitangkar*, and other games.

Other methods proven to improve disaster preparedness among elementary school students include tabletop exercises, which have been proven effective in enhancing their preparedness for flood disasters ($p = 0.001$) (Safitri, 2022). The game "*Sitangkar*" has been found to significantly influence the knowledge and preparedness of elementary school students in facing fire disasters ($p = 0.000$) (Irfan, 2023). Research conducted by Nekada et al. (2023) demonstrates a significant impact of education and preparedness simulation on students' readiness in facing Mount Merapi eruption, both before and after the intervention ($p = 0.00$), with a mean difference of 8 points (from 76.00 to 84.00).

The success of the learning process is considered good when students show improvement in learning outcomes. In teaching and learning processes that rely solely on lecturing, students often become passive listeners to the teacher's lectures, resulting in low learning outcomes (Kristianty & Sulastri, 2021).

The teaching-learning process aims to stimulate the intellect, emotions, attention, and abilities or skills of students, thereby facilitating the learning process. The Education Association (1969) defines instructional media as communication tools

in print or visual form, including hardware technologies and the positioning of instructional media. Given that the learning process is a form of communication occurring within a single system, instructional media holds a significant position as a component of the learning system. Without media, communication cannot occur, and consequently, the learning process, as a form of communication, cannot proceed optimally. Therefore, instructional media is an integral component of the learning system. (Luh & Ekayani, 2021).

The use of media in the learning process can evoke new interests and desires, ignite motivation, and provide stimulation for learning activities. Moreover, it can have a psychological impact on children. (Wasliyah et al., 2017).

Comics feature engaging visuals and colors that capture students' interest, making them more inclined to learn new knowledge because the instructional media used is more appealing. Comics also help develop students' ability to comprehend the material presented. Apart from being enjoyable to read, disaster comics serve as engaging tools for students to learn disaster preparedness and foster their reading interests.

Reading is a positive activity. In addition to broadening knowledge, regular reading strengthens human brain memory recall. Reading comics is an enjoyable activity where our fantasies soar along with the storyline depicted on each page. Comics are popular across all age groups, from children to teenagers and adults. This popularity stems from comics being entertaining and easy to understand. (Ayuwandira & Suprpto, 2022).

Digital comics, compared to traditional printed comics, have proven to significantly enhance students' preparedness as evidenced by a much greater difference in mean scores among students educated with

digital comics. Education through comics designed with images, colors, and text that convey messages engages children more effectively, encouraging them to observe and absorb information. This enables them to understand and successfully prepare for disasters such as the tornado. Additionally, digital comics can be accessed directly via gadgets, making them readily available for learning. School-age children's knowledge can be enhanced when explanations are delivered through engaging media, whether visual or audio-visual, allowing them to depict and understand based on what they see. (Maharani et al., 2021). According to Suyuthi (2011) in (Wasliyah et al. (2017), the use of visual effects, especially comics, in disaster preparedness education for children aims to increase their interest in learning how to prevent or cope with disasters.

CONCLUSIONS

The use of digital comics has been proven to significantly enhance elementary school students' preparedness in facing tornado disasters compared to using PowerPoint (PPT) presentations. Future researchers are encouraged to integrate these comics into applications accessible to children, especially by creating cartoon versions to further stimulate children's interest and make them easily accessible via gadgets.

LIMITATION

The comic used in this study is in pdf format and can only be accessed by students who have the file, and cannot be accessed globally on the website or online platform.

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APPLICATION OF LEGO PLAY THERAPY TO REDUCE ANXIETY LEVELS IN PRESCHOOL CHILDREN DUE TO HOSPITALIZATION

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ABSTRACT	Keywords
Anxiety is one of the responses of preschoolers who are undergoing hospitalization. Hospitalization often causes trauma to the child and sometimes makes the child cry, and refuses to cooperate during treatment. To overcome anxiety in preschoolers, The nurse's task in carrying out the intervention must consider the needs of the child in relation to his growth and progress. One of the activities to reduce anxiety in preschoolers is to provide lego play therapy. The purpose of proving EBNP by applying lego play therapy to reduce anxiety levels in preschool children in the age range of 3-6 years who are undergoing hospitalization. The design used is a descriptive method involving 3 respondents of preschool children, the instrument used is using the Preschool Anxiety Revised Scale (PASR) questionnaire. The action given is lego play therapy 6 times for 3 days with a duration of 20-30 minutes. Research shows that lego therapy affects anxiety levels in children aged 3 to 6 while they are in hospital.	Preschool, Hospitalisation, Anxiety, Lego Play Therapy

INTRODUCTION

Hospitalization is a situation where a child must be hospitalized to receive treatment and treatment, causing anxiety in children and their parents (Ramdaniati et al., 2016). Hospitalization, also known as hospitalization, can generate anxiety in children due to changes in their environment and health condition (Arifin et al., 2018). When little ones are in hospital, they usually don't have the opportunity to move much and are forced to rest frequently, so this can

influence increased anxiety in children (Wijaya, 2019).

Anxiety is a feeling of fear, it is a response to external or internal stimuli in the form of emotional, behavioral, physical, and cognitive symptoms (Videbeck, 2014). Children who are sick and hospitalized often show irritability, irritability, aggression, suspicion, timidity, and anxiety easily (Hurlock, 2013). The reaction of preschool children to anxiety is that children often cry secretly because they are abandoned by their parents, have trouble sleeping, refuse to eat,

are uncooperative with health workers when they want to carry out treatment and often ask about their condition (Kaluas, 2015). The environment of a hospital is an element that affects anxiety, such as the rooms where treatments are carried out, particular smells and the use of white coats by medical staff. Other factors that affect children's anxiety are age, experience of illness and hospital treatment (Setiawati & Sundari, 2019).

Research conducted by Hidayati et al., (2021) on "The Effectiveness of Play Therapy on the Anxiety Level of Children Undergoing Hospitalization" stated that of the 30 preschool-age children who underwent hospitalization, 16 children (53.3%) experienced moderate anxiety levels, 11 children (36.7%) experienced mild anxiety levels and 2 children (6.7%) experienced severe anxiety levels, and there were 1 child (3.3%) who did not experience anxiety. One way to manage anxiety is to practice play therapy.

Play therapy is a fundamental element in a child's existence and is one of the most effective tools for dealing with stress in young patients during hospitalisation. Given that hospitalization can represent a critical event in a child's life and often brings with it excess stress, children need playful activities to express fear and anxiety, using play as a means to cope with these tensions (Setiawati & Sundari, 2019). Play therapy at preschool age emphasizes language development, the ability to equalize and differentiate, hone fine motor skills of preschool-age children, and control emotions. The selection of lego as one of the educational games because it can play a role in the intelligence and fine motor skills of preschool-age children through constructive play (Sari & Afriani, 2019).

Lego play therapy is a type of play therapy that uses toys that can be arranged and disassembled that have various shapes

such as squares, rectangles, and have serrations. Lego includes constructive games or building builds to increase intelligence and creativity in children (Tesaningrum, 2014; in Yuniati & Maryatun, 2023). The purpose of lego play therapy is to divert the child's concentration that was previously focused on the anxiety and fear due to the pain that the child feels, then the child's concentration will be able to switch to lego games because they want to complete the game on the lego arrangement. To lower anxiety in young children, it is essential to have a tool that can manifest anxiety, and one of these is play therapy with lego (Arbakyah, 2021).

Based on the results of a study conducted by Yanti et al., (2023) on "The Application of Lego Play Therapy in Reducing Anxiety Levels in Preschool-Age Children During Hospitalization in the Orchid Room of Salatiga City Hospital", after it was observed that preschool children showed reduced anxiety levels both before and after treatment with Lego play therapy.

In a study conducted by Hani et al., (2021) on "The effect of play therapy (lego) on the anxiety level of children aged 3-6 years during hospitalization in the Paradise room of RSI Banjarnegara", the results of the research on the level of anxiety in preschool children during hospitalization before being given lego play therapy were mostly moderately anxious, which was 65.8% and the level of anxiety in preschool children during hospitalization after being given lego play therapy was mostly experienced mild anxiety, which was 94.7%. There is an effect of lego play therapy on anxiety levels in preschoolers during hospitalization.

Based on the background description above, the researcher is interested in implementing the EBNP on "Application of Lego Play Therapy to Reduce Anxiety Levels in Preschool Children Due to Hospitalization".

METHOD

The case study design used is a descriptive method with the research design used, namely the Pretest Posttest One Group Design case study. In this case study, the researcher explored the problem of nursing care in preschool children who were treated in the 1st floor children's room and experienced anxiety due to hospitalization by applying lego play therapy as an

Name	Pre- Intervention	Post Interventions
An. MZ	Pre: Moderate Anxiety (57)	Post: Mild Anxiety (37)
An. N	Pre: Moderate Anxiety (65)	Post: Mild Anxiety (50)
An. R	Pre: Moderate Anxiety (63)	Post: Mild Anxiety (44)

intervention based on Evidence Based Nursing Practice to reduce anxiety due to hospitalization in the 1st floor of Dr. Kariadi Semarang Hospital, the research was conducted by interviews, observations and documentation studies, which is quantitative to apply Evidence Based Nursing Practice lego play therapy in children who experience hospitalization anxiety by monitoring the effect before and after being given lego play therapy on children's anxiety levels. The intervention was carried out for 3 days on February 19-21, 2024 to 3 (three) people with inclusion criteria: children aged 3-6 years (preschool), children who are cared for in the children's room on the 1st floor, children who experience anxiety, parents and children who are willing to be respondents and with exclusion criteria: children who have decreased consciousness, children who are bedresting, parents who are not willing to be respondents.

Sampling in this study was by Purposive Sampling. The data collected are primary data and secondary data. The instruments used in this study were: Preschool Anxiety Scale Revised (PASR) questionnaire sheet, SOP for play therapy, Lego game.

RESULTS

Table 1 Frequency of respondents by gender

Gender	Frequency	Presented
Man	3	100%
Woman	0	0%

Based on table 1, it is known that the respondents are male, namely 3 children (100%).

Table 2 frequency of anxiety before and after the intervention

Based on table 2, it shows that anxiety in preschool-age children during hospitalization before being given lego play therapy is experiencing moderate anxiety as many as 3 children. Meanwhile, anxiety in preschool-age children during hospitalization after being given lego play therapy decreased to mild anxiety in 3 children.

DISCUSSION

1. Overview of respondent characteristics
- The characteristics of the respondents were known to be male, namely 3 children (100%). Boys are more susceptible to a decline in the immune system due to children being more active in play. Boys prefer games with characteristics that require higher energy such as running around, climbing stairs and dirty toys such as mud, soil and water toys. Activity in play often

causes children to experience a decrease in immunity and are at risk of experiencing pain (Hidayat et al., 2021). Boys have less adaptive aspects to stressors, compared to girls. The decrease in hospitalization stress in children but hospitalization stress in boys is higher when compared to girls (Nastiti et al., 2016). This is in line with the research conducted by Hani, most of the respondents are male (52.6%).

2. Anxiety levels before being given play therapy

The results of the study showed that the anxiety of the three preschool-aged children aged 3-6 years during hospitalization before being given play therapy was moderate anxiety as many as 3 children. Preschool-age children are synonymous with the desire to explore something that has not been understood, so that the anxiety of preschoolers is related to everything that makes them foreign to them (Idris, 2018). In a healthy state, preschool-age children tend to be able to adapt to the environment and new friends that are appropriate to their growth and development age. When a child is sick and has to be hospitalized, an approach, attention and explanation are needed specifically to the child (Mulyanti et al., 2018). Kurniasih (2015) research said that preschool children who are cared for are easily hospitalized. Children of this age have not been able to adapt well to an uncomfortable environment. Experiences related to hospitalization provide a unique experience for preschool-age children, although normally preschool-aged children can easily adapt and relate to strangers easily. Preschoolers consider pain to be something scary so treatment and medication procedures cause mental

problems in children. Children feel that they have lost a play environment, a loving and fun family environment (Harahap, 2019).

Children's reactions to illness can include anxiety, fear of illness, lack of control in emotions, iradptive anger and regression (Novia & Arini, 2021). Saputro and Fazrin (2017) said that anxiety in children, namely children experiencing perceived tension, causes children to become aware of the environment. Signs of anxiety are restlessness, irritability and seeking attention. This is also in line with researchers Aryani and Zaly (2021) who stated that anxiety is something that often appears in daily life can cause children to become alert and afraid. Symptoms that often occur include tension and restlessness, fear, crying.

Anxiety due to hospitalization that occurs in preschool children is a condition that can risk interfering with children's growth and development and have an impact on the healing process. Anxiety that is resolved quickly and well will make the child more comfortable and cooperative with health workers so that it does not hinder the nursing process. If the anxiety lasts for a long time and is not resolved, it will cause a detachment attitude in the child so that the child begins to not care about the surrounding environment, prefers to be silent or apathetic, refuses to be given action and the worst will cause trauma after being discharged from the hospital (Sari & Afriani, 2019). The results of this study are in line with research conducted by Ariani (2021), that the level of anxiety of preschool-age children before being given lego play therapy intervention was 26 children (74.3%).

Some changes in the physical environment during hospitalization may make the child feel unfamiliar and afraid. This will make the child feel insecure and uncomfortable. In addition, children experience physiological changes that can be seen through the signs and symptoms they experience when they are sick. The presence of injuries and pain makes the child disturbed. Preschool-aged children react to pain the same as they did when they were babies. The child will react to pain by smirking, crying, clenching teeth, biting lips, opening eyes wide, or performing aggressive actions such as kicking and punching. However, as time goes by and has been hospitalized, usually children are able to communicate the pain they experience and show the location of the pain.

3. Anxiety levels after being given play therapy

The results of the study after being given lego play therapy (posttest) showed that the three preschool-age children who were anxious due to hospitalization experienced a decrease in moderate anxiety levels to mild anxiety. The results of this study are in line with Laswiri (2018), namely after the Lego play therapy intervention, most preschool-age children experienced a decrease in the mild anxiety category of 16 children (84.2%). While the child is undergoing treatment in the hospital, it is necessary to play as therapy to overcome the child's anxiety and fear. Play therapy is a play activity that is carried out to help heal children and a means of continuing the growth and development of children optimally (Yanti et al., 2023).

Therefore, intervention is needed to overcome anxiety in children during

hospitalization in order to facilitate children in expressing their feelings. If children's anxiety during hospitalization can be resolved, it will support effective coping and support the smooth operation of nurses in providing nursing care. For this reason, children need a medium that can express these feelings and be able to cooperate with health workers during treatment. One of the most effective media is through play activities (Musdalipa et al., 2013).

4. Effect of lego play therapy on anxiety levels

The results of the research on the level of anxiety before being given Lego play therapy to An. MZ with a score of 57 anxiety is moderate, in An. N with a score of 65 his anxiety is moderate and An.R with a score of 63 his anxiety is moderate. Then an intervention was given Lego play therapy on An. MZ with a score of 37, An. N with a score of 50 and An.R with a score of 44 are included in the mild anxiety category. Based on table 2, it can be concluded that the provision of lego play therapy is significant in reducing the level of anxiety in preschool-aged children at Dr. Kariadi Semarang Hospital.

The level of anxiety in preschool-aged children who undergo hospitalization has decreased from those who experience moderate anxiety to mild anxiety. These results are in line with the research of Mujiyanti & Rismawati (2019) that there is an influence between anxiety levels before and after lego play therapy is carried out. Research conducted by Israeli et al., (2020) shows that play therapy has the ability to reduce anxiety and tension in children.

To help children cope with anxiety during hospitalization, it is essential to adopt a method based on the philosophy

of atraumatic care. This atraumatic approach represents a type of support offered by health professionals to children within health services, with particular attention to interventions that can decrease the physical stress and emotional distress experienced by young patients and their parents. Efforts for nurses and health workers to minimize the impact on the hospitalization period in preschool-aged children can be done with play therapy techniques (Arbakyah, 2021).

Play is a crucial role in the mental, emotional and social health of young people. As with their growth needs, the need to have fun does not stop even when children are ill or hospitalized (Savitri et al., 2018). Play therapy is believed to be able to eliminate limitations, obstacles in oneself, stress, frustration and have emotional problems with the aim of changing the child's inappropriate behavior into expected behavior and the child who is often invited to play will be more cooperative and easy to cooperate with during the treatment period (Hasnita & Sherly, 2018).

Play therapy at preschool age emphasizes language development, the ability to equalize and differentiate, hone fine motor skills of preschool-age children, and control emotions (Sari & Afriani, 2019). Actions to reduce anxiety in preschool children are, with play therapy and cooperation with good parents, so that it can minimize or reduce stress in children who are hospitalized. One of the play therapies that can be used to reduce anxiety in children due to hospitalization is lego games (Arbakyah, 2021).

Lego games are games that spur children's creativity, toys made from small blocks of colored plastic that can

be assembled into different configurations such as vehicles, buildings, planes or locomotives (Soebachman, 2012). Playing with lego can also divert the concentration of children who were previously focused on anxiety and fear due to their illness, then the child's concentration will be able to switch to lego games because they want to complete the arrangement of the lego. This playful experience includes easy techniques for coping with anxiety, such as relaxation and focusing on something else, which are effective in decreasing anxiety during nursing practices, thus promoting collaborative behavior during the action (Mujiyanti & Ris, 2019).

CONCLUSIONS

Anxiety in the three preschool children aged 3 – 6 years during hospitalization before being given lego play therapy experienced anxiety in the moderate anxiety category, after being given lego play therapy, the three children experienced a decrease in anxiety to mild anxiety. There is an effect of lego play therapy on anxiety levels in children aged 3 – 6 years during hospitalization. The limitations at the time of implementation were that the application was only carried out to 3 respondents with the age criteria of 3 – 6 years, the same gender of respondents was carried out on boys, and the limited number of cases taken.

It is anticipated that the results of this research will help decrease anxiety through the use of Lego play therapy as a complementary non-pharmacological approach. Furthermore, it is hoped that future researchers can further improve this study by including more participants and cases, and by implementing control or comparison groups, as nurses and hospitals could develop standard operating procedures

to lower anxiety levels in hospitalized children between 3-6 years by administering Lego play therapy for 20-30 minutes twice a day for three days. In all three cases, there was a decrease in anxiety levels from the moderate anxiety category to mild anxiety.

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IMPLEMENTATION OF COMPLEMENTARY MIDWIFERY SERVICES ON MOTHER

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ABSTRACT	Keywords
<p>: Complementary therapy is one of the community's treatment options, especially for pregnant and giving birth women. In various health service settings, quite a few clients ask health workers, such as midwives, about complementary or alternative therapies. This happens because clients want to get services according to their choices, so if their wishes are fulfilled, it will have an impact on client satisfaction. This can be an opportunity for midwives to play a role in providing complementary therapy. Regarding complementary therapy, it is regulated in the Decree of the Minister of Health No. 1109/Menkes/Per/IX/2007 concerning complementary-alternative medicine.</p> <p>Objective: to determine the implementation of complementary midwifery services at the Independent Midwife Practice Place (TPMB) in the Blimbing area, Kesamben District, Jombang. Method: Survey, descriptive type with quantitative and qualitative approaches. The population in this study were all midwives who carry out midwifery practice independently and provide complementary therapy in the Blimbing area, Kesamben subdistrict, Jombang, a total of 5 midwives. The total sample taken was 5 TPMB. The data was analyzed and presented quantitatively in the form of a frequency distribution and qualitatively using an interactive model according to Miles and Huberman in Sugiyono (2013). Results: complementary midwifery services were provided by 5 respondents. Respondents were 30-49 years old, had midwifery education at Diploma III Midwifery and Midwifery Professional level, and had been in independent practice for more than 8 years. The types of services provided are 2-5 types, namely acupressure, baby/toddler massage, oxytocin massase, use of herbal medicine/traditional as a complement to conventional medicine, and yoga.</p>	<p>Midwifery Services, Complementary, Mother and Child</p>

INTRODUCTION

Health services must be provided fairly and equally to the community. Health services have a very important role in improving health, preventing and curing disease and improving the health of individuals, families, groups and communities. Therefore, the government is obliged to support and facilitate the implementation of health services related to health, health workers and patients. Without exception, maternal and child health services have become the government's focus to reduce morbidity and mortality rates.

The current paradigm of midwifery services has experienced a shift. Over the past decade, midwifery care has been implemented by combining conventional and complementary midwifery services, and has become an important part of midwifery practice. (Harding & Foureur, 2009).

According to WHO, complementary medicine is non-conventional medicine that does not originate from the country concerned. So for Indonesia, herbal medicine, for example, is not considered complementary medicine but is traditional medicine. Traditional medicine in question is treatment that has been used since ancient times and passed down from generation to generation in a country. But in the Philippines, for example, this Indonesian herbal medicine is categorized as complementary medicine. Complementary therapy is a method of disease management that is carried out as a support for conventional medical treatment or as another treatment option outside conventional medical treatment. Based on data sourced from the World Health Organization in 2005, 75 – 80% of the world's population had undergone non-conventional treatment. In Indonesia itself, non-conventional medicine is popular, including one of the treatment methods

Midwifery services are an integral part of Midwifery, health services provided by registered midwives, can be carried out independently, in collaboration and with referrals to pregnant women, postpartum mothers, newborns, babies and children, as well as women of reproductive age and age. carry on. (Kepmenkes RI, No. 369/ME NKES/SK/I II /2007). To achieve the Sustainable Development Goals (SDGs) by 2030, every health worker in carrying out his duties requires commitment and consistency to increase his professionalism. Currently, midwives are at the forefront of direct contact in providing reproductive health services for women's life cycles and the health of mothers and newborns. Currently, midwives are at the forefront of direct contact in providing reproductive health services for women's life cycles and the health of mothers and newborns. For this reason, midwives must have a strategic role in providing healthy and prosperous life services, especially maternal and baby health. The National Health System (SKN) in accordance with Article 3 of Presidential Decree Number 72 of 2012 states that the national health system includes seven health management sub-systems. One of the government's priority strategies and programs in the health sector is health research and development (R&D), including the creation of health services for pregnant women and mothers giving birth in Indonesia. Therefore, it is necessary to develop the midwifery profession, which often comes into contact with the community in carrying out midwifery practices, namely by increasing knowledge and skills that are based on evidence-based services because midwives are required to be able to provide quality services and have advantages compared to other medical centers. Application of complementary medicine in the midwifery service setting,

which aims to improve the level of public health and includes promotive, preventive, curative, and rehabilitative efforts that are quality, safe, and effective.

The role of midwives that can be provided in complementary therapy can be adjusted to the role of existing midwives, according to the limits of their abilities. Basically, the development of midwives who pay attention to this already exists. The increasing needs of society and the development of research on complementary therapies provide opportunities for midwives to participate according to society's needs. Midwives can act as consultants for clients in choosing appropriate midwifery services or help provide direct therapy. However, this needs to be developed further through research so that it can be used as better midwifery therapy and can be used by clients.

METHOD

This research uses a survey research method, where the research is carried out without intervening with the research subjects. The population in this study is TPMB, which provides complementary services to mothers in the Blimbing area, Kesamben District, Jombang Regency, for a total of 5 TPMB. Data collection was carried out directly from respondents. In-depth interviews were conducted directly by researchers, either by visiting their residence or by telephone interviews to explore and expand hidden information using open questions.

RESULT

Characteristics of the TPMB studied

DESC RIPTI ON	TP MB 1	TP MB 2	TP MB 3	TP MB 4	TP MB 5
Number of midwives	2	4	2	2	2
Owner's latest education	Midwife Prof ession	Diploma III Midwife ry	Diploma III Midwife ry	Diploma IV Midwife ry	Diploma III Midwife ry
Owner's ages	45 years old	38 years old	30 years old	49 years old	30 years old
Long standing	22 years	12 years	8 years	15 years	8 years
Duration of provision of complementary services	3 years	4 years	1 years	1 years	3 years
Number of complementary	2	5	2	2	2

services
provided

DISCUSSION

Based on data from table 1, the owner of TPMB is a graduate of the midwife profession, Diploma IV Midwifery and Diploma III Midwifery. Long established over 5 years. Duration of providing complementary services: 1-4 years. Meanwhile, the number of complementary services provided is still limited. Except for TPMB 2, which provides 5 types of complementary therapy services.

Complementary therapy is known as traditional therapy combined in modern medicine. Complementary is the use of traditional therapy in modern medicine (Andrews et al., 1999). This terminology is known as therapeutic modalities or activities that add to orthodox approaches in health services (Crips & Taylor, 2001). Some people also call complementary therapy holistic medicine. This opinion is based on a form of therapy that affects the individual as a whole, namely an individual's harmony to integrate mind, body, and soul in a functional unity (Smith et al., 2004).

Based on research results, there are 5 complementary midwifery services carried out by midwives, with complementary midwifery services in the type of massage (100%). Followed by acupressure (30%), then yoga services (20%) and herbal medicine (10%). The results of research by Koc Z (2012) in Turkey stated that 58.9% of 129 midwives working at family health centers in the Samsun region provided

alternative and complementary medicine to their patients, especially pregnant women.

Complementary medicine and therapy have been regulated in PERMENKES No. 1109/Menkes/Per/IX/2007. The types of complementary therapies include:

1. Mind and body interventions include hypnotherapy, mediation, spiritual healing, prayer, and yoga.
2. Alternative medicine service systems include acupuncture, acupressure, naturopathy, homeopathy, aromatherapy, and Ayurveda.
3. Manual healing methods include: chiropractic, healing touch, tuina, shiatsu, osteopathy, and massage.
4. Pharmacological and biological treatments include: herbs, ginseng, and ginseng.
5. Diet and nutrition for prevention and treatment include macronutrient and micronutrient diets.
6. Other means of diagnosis and treatment include ozone therapy and hyperbaric.

Based on the regulations of the Minister of Health of the Republic of Indonesia regarding the types of complementary therapies that have been recognized in Indonesia mentioned above, in fact every health worker has legal protection to be able to provide health services using complementary therapies in accordance with the scope of services based on their profession. In midwifery services, almost all of the above can be applied by midwives to mothers and children. Types of massage applied by midwives in complementary services include:

1. . Oxytocin Massage: Oxytocin massage is a massage of the spine from the 5-6th rib to the scapula, which will speed up the work of the parasympathetic nerves by stimulating the posterior pituitary to release oxytocin (Hashimoto, 2014).
2. Postpartum Massage: This massage is generally carried out by midwives in the first to second week after delivery of the postpartum mother. The results of the interview explained that the aim of carrying out postpartum care (postpartum spa) by performing massage is to improve blood flow and increase the comfort of postpartum mothers.
3. Baby Massage: Some midwives receive baby massage as part of a series of baby spa treatments. The results of the midwife's presentation explained that baby massage would make the baby less fussy and increase appetite. The ages of babies being massaged vary, ranging from 0 to 12 months.
4. Breast Massage: The breast massage referred to in this study is breast massage during the postpartum period. Midwives who provide this care do so at the same time as postnatal care treatment. The midwife's explanation explained that the massage was done gently, with the aim of increasing breast milk production.
5. Perineal Massage: Perineal massage is a gentle massage or stretching performed on the perineal area (the skin between the anus and vagina). Perineal massage aims to increase the elasticity of the perineum. Increasing the elasticity of the perineum will prevent perineal tears during normal delivery or during episiotomy.

The most common use of complementary therapy by midwives is massage therapy (100%). Followed by acupressure (30%), then yoga services (20%), and herbal medicine (10%).

Efforts that can be made to increase the scope of providing complementary midwifery services are: every health worker and community uses and develops complementary therapies, there is a need for further research regarding and alternatives, there is a need for full support from professional organizations and the government in the form of facilitating health workers in providing education and training on the use of complementary therapies, there needs to be outreach and promotion efforts to the community about the benefits of using complementary and alternative therapies as a complement to providing medical services, and empowering midwives as facilitators for the community to increase promotive and preventive efforts through complementary therapies.

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FACTORS RELATED TO NURSES' MOTIVATION TO CONTINUE EDUCATION AT THE NATIONAL SPORTS HOSPITAL IN 2024

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ABSTRACT	Keywords
Higher education has a very important role in the development of surgical technology and professional life training. In organizing nursing education, motivation is needed which influences internal and external factors, so that nurses have the desire to improve their competence. Objective: to find out what factors are related to motivation to continue education nurses at the National Sports Hospital in 2024. The purpose of this research was to find out what factors are related to nurses' motivation to continue their education at the National Sports Hospital in 2024. The type of research used was a cross-sectional design to examine whether there was a relationship between the motivational factors of family support, work environment and income and nurses' motivation to continue their education. The population of this study were all nurses at the National Sports Hospital, totaling 34 respondents and the sampling technique used total sampling technique. The instrument used was a questionnaire and data analysis used univariate and bivariate analysis techniques with the Spearman Rank statistical test. The results of the study showed that only the family support variable had a relationship with nurses' motivation to continue their education, while work environment factors and income did not have a significant relationship: family support ($p_{rho} = 0.620$), work environment ($p_{rho} = 0.124$), and income ($p_{rho} = 0.199$). This research recommends that it is necessary to maximize the role of family support in nurse career development programs in hospitals and increase the role of the work environment and financial support for nurses who will continue their education.	Nursing motivation factors, Nurse motivation, Nursing education

INTRODUCTION

Nursing as a profession is required to guarantee the quality of its services and ensure that each member has the skills that need to be maintained and improved, so it is the obligation of every nurse to improve their competence, one of which is through nursing education (DPP PPNI, 2022). Through higher education in nursing, it is hoped that there will be an acceleration of the process of change or transition in nursing which was originally an occupational activity to become a professional one and which originally used a traditional approach to become a scientific solution that can be accounted for by service users and the profession (Nursalam, 2012).

In 2024, the Health Human Resources Development and Empowerment Agency recorded that the number of health workers in Indonesia would reach 1.9 million people, of which the majority came from nurses with 673 thousand people, and this number increased by 28.7% from the previous year in 2023, namely 523 thousand people. Of the total number of nurses in Indonesia in 2021, 68.3% of them are non-nurses (314,801 people), 18.4% are nurse nurses (85,108 people), while the remaining 13.3% are other groups (Master of Nursing, Nursing Specialist, and Doctor of Nursing) (Data from the Indonesian Ministry of Health, 2024). This data shows that the majority of nurse education in Indonesia is still at the Diploma III or Non-Nurse level, so it is necessary to improve the quality of nurses to create more competent and professional nurses, and this can be achieved through improving nursing education.

The enactment of the “Peraturan Menteri Kesehatan No.26 Tahun 2019” which requires a nurse to have the lowest educational qualification of a Nurse to carry out practice, makes the motivation of nurses

to continue their education an interesting issue to study.

Research conducted by (Widiyono et al., 2021) illustrates that superior support is the factor most related to nurses' motivation to continue their education with a p value = 0.049 compared to the value of competition, family support and socio-economics. However, this is different from (Yulianti E & Antoro B, 2021) regarding "Factors that influence nurses' motivation to continue their professional education as a nurse where remuneration is the most dominant factor with a percentage of 54% in influencing nurses' motivation to continue their education compared to other factors.

The National Sports Hospital (RSON) is a hospital belonging to the Ministry of Youth and Sports located in Cibubur, East Jakarta, which was built with the aim of becoming a national reference for athletes who have sports health problems. The National Sports Hospital needs to have competent human resources to fulfill these goals which are in line with one of the hospital's missions, namely to provide quality sports health services for athletes, sports people and society in general in a complete manner (RSON Profile, 2022).

The National Sports Hospital itself always provides opportunities and motivation for its employees in an effort to always improve employee competency, both through training and educational pathways as part of its employee competency development program. In accordance with Law Number 5 of 2014 concerning State Civil Apparatus (ASN), every ASN has the same rights and opportunities to develop competence and earn a better income than before. The hospital has provided opportunities for all nurses, all of whom are civil servants, through a gradual organizational plan where intermediate nurses who are continuing their education

have been provided with places to fill the positions of expert nurses after completing their education in accordance with "Keputusan Menteri Pemuda Dan Olaharga No 56 Tahun 2023" concerning map of positions within the Ministry of Youth and Sports.

Based on an initial survey on February 1 2024 at the National Sports Hospital, 24 of the 34 nurses had a D3 education, while 10 other nurses had a nursing education and no nurses had continued to the Nursing Specialist level. There are colleagues who have not continued their education due to various reasons such as no money, no friends, no communication with family or other reasons.

These phenomena became the basis for researchers to conduct research at the National Sports Hospital to find out what factors are related to nurses' motivation to continue their education at the National Sports Hospital in 2024 in order to encourage improvements in the quality of nurses to become more competent and professional so that can guarantee security and safety and provide complete service to patients.

METHOD

This research is a quantitative study that uses observational analytical methods with a cross-sectional design regarding factors related to nurses' motivation to continue their education at the National Sports Hospital in 2024.

The population in this study were all nurses who worked at the National Sports Hospital with a D III educational background and nurses, totaling 34 respondents. The sample used was total sampling, that is all members

of the population were used as research samples.

The research instrument used for data collection is a questionnaire that has been developed in accordance with the research variables including factors that influence motivation, namely family support, work environment, income and nurses' motivation to continue their education.

The research implements ethical aspects and has been declared ethically appropriate by the Health Research Ethics Committee of the Bani Saleh College of Health Sciences with letter number No: EC.009/KEKP/STKBS/V/ 2024.

The process of conducting research and data management is carried out through editing, coding, data entry, cleaning and tabulating activities. Data analysis was carried out univariately to determine the distribution of variables and bivariate analysis to determine the relationship between the independent variables of family support, work environment and income with the independent variable of nurses' motivation to continue their education through the Spearman rank correlation test.

RESULTS

A. Univariat Analysis

Table 1. Frequency Distribution of Respondents Based on Age, Gender, Education Characteristics at the National Sports Hospital in 2024 (n=34)

Variable	Frequen cy	Percenta ge (%)
Gender		
Man	14	41.2
Woman	20	58.8
Total	34	100
Age		
Early adulthood	18	61.2

26 – 35 years	16	18.8
Late adulthood 36 – 45 years old	34	100
Total		
Education		
D – III Bachelor's Degree in Nursing	22	64.7
	12	35.3
Total	34	100
Currently Pursuing Education		
Yes	11	32.4
No	23	67.6
Total	34	100

Based on table 1 above, the majority of respondents were female, namely 20 respondents (58.8%) and the majority were aged between 26 - 35 years, namely 18 respondents (61.2%), for the education level the majority were D- III Nursing were 22 respondents (64.7%) and the majority were not currently pursuing education, namely 23 respondents (67.6%).

Table 2. Frequency Distribution of Respondents Based on Nurses' Level of Motivation to Continue Education at the National Sports Hospital in 2024 (n=34)

Motivation	Frequency	Percentage (%)
High	19	55.7
Low	15	44.3
Total	34	100

Based on table 2 above, the majority of respondents had high motivation to continue their education, namely 19 respondents (55.7%) and 15 people (44.3%) had low motivation.

Table 3. Frequency Distribution of Respondents on Family Support Factors at the National Sports Hospital in 2024 (n=34)

Family Support	Frequency	Percentage (%)
High	23	67.6
Low	11	32.4
Total	34	100

Based on table 3 above, the majority of respondents have high family support for continuing their education, namely 23 respondents (67.6%)

Table 4. Frequency Distribution of Respondents Work Environment Factors at the National Sports Hospital in 2024 (n = 34)

Work environment	Frequency	Percentage (%)
Support	23	67.6
Less Supportive	11	32.4
Total	34	100

Based on table 3 above, the majority of respondents have high family support for continuing their education, namely 23 respondents (67.6%)

Table 5. Frequency Distribution of Respondents on Income Factors at the National Sports Hospital in 2024 (n=34)

Income	Frequency	Percentage (%)
Enough	23	67.6
Not Enough	11	32.4
Total	34	100

Based on table 5 above, the majority of respondents have sufficient income to continue their education, namely 23 respondents (67.6%)

B. Bivariat Analysis

Table 6. Relationship Between Family Support Factors and MotivationAt the National Sports Hospital in 2024 (n=34)

Variable	Motivation					
	High		Low		Total	
	N	%	n	%	n	%
Family Support						
High	9	60.9	14	39.1	23	100
Low	1	9.1	10	90.1	11	100

Correlation Coefficient	<i>p value</i>
0.620	0,000

Based on table 6 above, it shows that of the total of 23 respondents who had high family support, most of them had a high level of motivation, namely 14 respondents (60.9%), while almost all of the 11 respondents who had low family support had low motivation, namely 10 respondents (90.9%). Based on the results of the correlation test, there is a p_{value} of $0.000 < 0.005$, indicating that there is a relationship between family support factors and nurses' motivation to continue their education, and the correlation coefficient value $p_{rho} = 0.620$ shows that there is a strong level of relationship between family support and motivation.

Table 7. The Relationship Between Respondents' Motivation and Work Environmental FactorsAt the National

Correlation Coefficient	<i>p value</i>
0.199	0,258

Sports Hospital in 2024 (n =34)

Variable	Motivation					
	High		Low		Total	
	n	%	n	%	n	%
Work Enviroment						
Support	9	39.1	14	60.9	23	100
Less Support	6	54.5	5	44.5	11	100

Correlation Coefficient	<i>p value</i>
0.124	0,480

Based on table 7 above, it shows that of the 23 respondents with a supportive work environment, the majority had low motivation, namely 14 respondents (60.9%). Meanwhile, of the 11 respondents who felt the environment was less supportive, most of them had high motivation, namely 6 respondents (54.5%). For the correlation test results, the $p_{value} = 0.480 > 0.05$ shows that there is no relationship between environmental factors and nurses' motivation to continue their education, while the correlation coefficient value $p_{rho} = 0.124$ indicates that the level of relationship between the two variables is very low.

Table 8. Relationship Between Respondens' Motivation and Income FactorsAt the National Sports Hospital in 2024 (n=34)

Variable	Motivation					
	High		Low		Total	
	n	%	n	%	n	%
Income						
Enough	1	4	1	5	2	10
Not Enough	0	3.5	3	6.5	3	30
N						
Enough	5	4	6	5	11	100
Not Enough	5	4.5	6	4.5	11	100

Based on the table above, it shows that of the 23 respondents who have sufficient income, the majority of respondents have a low level of motivation, namely 13 respondents (56.5%). Meanwhile, of the 11 respondents with low income, most of them had low motivation, namely 6 respondents (54.5%). For the correlation test results, the $p_{\text{value}} = 0.258 > 0.05$ shows that there is no relationship between the income factor n and nurses' motivation to continue their education, while the correlation coefficient value $p_{\text{rho}} = 0.199$ indicates that the level of relationship between the two variables is very low.

DISCUSSION

Based on the data analysis that has been carried out, the results of the research show that of the 34 respondents, the majority of respondents have high motivation with supportive family support of 14 respondents (60.9%) and the results based on the relationship test results show that there is a strong and significant relationship between family support. and motivation of nurses at the National Sports Hospital.

Similar results were also found in research by Perceka (2020) that of the 45 respondents who had a tendency to continue their education, the majority of respondents, namely 26 respondents (59.1%) had high family support for continuing their education.

Likewise in other research, in (Sugiarto & Rahaju, 2017) research, from a total of 45 respondents who had high motivation, almost all respondents, namely 42 respondents (93.3%) had high family support for continuing their education. Family support is the attitude, actions and acceptance of the family towards its members. Family support can take the form of emotional, instrumental, informative and assessment support (Kamaryati & Malathum, 2020).

Emotional support is support provided by the family in the form of attention, affection and moral support which aims to improve the emotional well-being of individuals and families. Meanwhile, instrumental support is support provided by the family in physical or material form. This support aims to help individuals carry out daily activities and meet their physical needs. Informative support is support provided by the family in the form of information and knowledge regarding the patient's health condition. This support aims to help the patient's family understand the patient's health condition and improve interactions between family members (Kamaryati & Malathum, 2020).

Herzberg's theory can be used to understand how this support acts as a motivating factor. Family support can be considered as an element that provides recognition and emotional encouragement, which is part of the motivator factors in Herzberg's theory. When nurses receive support from their families, they feel more appreciated and supported in their efforts to continue their education. This can increase nurses' intrinsic motivation to achieve their educational goals (Iskandar & Yuhansyah, 2018).

Previous research by Widiyono et al. (2021) stated that one form of family support is emotional support, which gives nurses a high sense of self-confidence and confidence in pursuing higher education. Apart from emotional relationships, the family also plays a role in moral and financial support so that a person can feel comfortable and reduce nurses' worries about financial problems. Another study by Sugiarto & Rahaju (2017) stated that family support has a significant relationship and the form of family support can be in the form of recommendations and advice, so that at least it will provide more motivation for nurses to continue their education to a

higher level. When nurses feel supported by their families, they are more likely to feel motivated to continue their education and achieve their career goals. Meanwhile, research by (Yulianta et al., 2023) also states that family support has a role in fostering a sense of security, so that individuals can realize that there is a family who pays attention, respects and loves them, thereby increasing the motivation of nurses to continue to innovate by increasing higher education and continuing to hone your skills to be useful for yourself, your family and the environment around you.

The findings in this research are in line with previous theory and research which shows that family support has a significant positive impact on individual motivation. In this study, family support was proven to have a strong positive impact on the motivation of nurses at the National Sports Hospital to continue their education. This suggests that families play an important role in helping nurses overcome the challenges and obstacles they may face in continuing their education.

This research has important implications for hospital management and policy makers. Hospital management can develop programs that support family involvement in the nurse education process. For example, a program that involves families in information and outreach sessions about the importance of developing education for nurses to face the challenges of global progress. Provide flexibility in work schedules for nurses who are pursuing education so they can manage their time between work at the office, home and studies. In addition, providing scholarships or financial assistance or interest-free educational loans for nurses who wish to continue their education can be an effective strategy to increase nurses' motivation.

Based on the results of data analysis on work environment factors, out of 34

people, 23 (67.6%) nurses felt that the work environment at the National Sports Center mostly supported nurses to continue their education, but the majority of nurses, namely 14 (60.9%) had The level of motivation is low to continue education to a higher level and based on correlation tests shows a weak correlation and there is no significant relationship between work environment factors and nurses' motivation to continue education.

This is different from Ifani (2022) research where out of 45 nurses, 25 nurses (55.6%) had high motivation and a good work environment. Likewise, research by Suryanti (2017) states that there is a significant influence between the peer environment on motivation to continue higher education with a tcount value greater than t_{table} , namely $4.001 > 2.01$ and a significance value of 0.000.

The work environment is all the conditions that occur related to work relationships, both relationships with superiors, relationships with colleagues or relationships with subordinates. The conditions that should be created are a positive atmosphere such as family, good communication and self-control. The benefit of a positive work environment is that it creates enthusiasm for work, so that productivity and work performance increase. Meanwhile, the benefit obtained from working with motivated people is that the work is completed correctly, which means the work is completed according to the correct standards within the time scale determined by Sedarmayanti (2022). This is in line with research by Suryanti (2017) where the peer environment has a big influence on changes in student behavior which will have an impact on social life and provide motivation for each other to continue their education to a higher level. However, the work environment is not always positive, there are negative impacts

that arise due to a negative work environment. As in research by Angreani (2020) which states that the absence of social support from the environment and an uncomfortable work environment can cause tension and boredom at work so that a person's motivation to work or achieve their goals decreases.

However, the findings in this study illustrate that the current work environment is not strong enough to influence the motivation of nurses to continue their education, so it is necessary to improve aspects of the work environment to be able to encourage the motivation of nurses at the National Sports Hospital to continue their education, such as career development programs, clear and effective, open and transparent communication, especially about educational opportunities and scholarships.

For the results of income factor data analysis, of the 34 nurses, 21 (61.8%) nurses at the National Sports House had sufficient income. However, the majority of nurses, namely 13 (56.5%) had a low level of motivation and 11 (43.5%) nurses had a high level of motivation to continue their education. The results of the Spearman rank relationship test showed that there was no significant relationship between the income factor and nurses' motivation to continue their education.

This is different from research by Purnamawati & Fauzia (2020) where of a total of 49 nurses who had high incomes, almost all of them, namely 47 nurses, 95.5% had high motivation to continue their education and the results of the relationship test stated that there was a relationship between income and nurses' motivation to continue their education with the hope that after completing their education, nurses will receive an increase in income, although not in the form of an increase in basic salary but in the form of allowances. Likewise with

other research Qinar et al. (2021) out of a total of 132 nurses who earned sufficient income, 70 nurses (53%) had high motivation to continue their education and the results of the relationship test showed that there was a relationship between socio-economic status and nurses' motivation to continue education.

The income received has an influence on work enthusiasm and enthusiasm. The greater the income given, the more their needs will be met. In this way they will have peace of mind in carrying out their duties (NitiseMITO, 2010). This theory is in line with research by Qinar et al. (2021) because good economic status makes people tend to expand their interests to include things they were previously unable to implement. On the other hand, if economic status experiences a decline due to family responsibilities or a less advanced business, then people tend to narrow their interests, including those interested in continuing or improving their education. This is related to consideration of educational costs for continuing education and costs for daily needs for the family. This is in line with the findings in the current research because even though the majority of nurses have sufficient income, there are still other considerations related to the daily needs of their families.

CONCLUSIONS

From the results of this study, it can be concluded that family support is the main factor related to the motivation of nurses at the National Sports Hospital to continue their education in 2024, while the work environment and income have nothing to do with motivation. Researchers suggest involving families in career development and education programs such as workshops on the benefits and importance of education for nurses, flexibility in work schedules or ease of applying for study leave for those who wish to continue their education,

financial support from hospitals or collaboration with educational institutions to ease the cost burden. nursing education so as to encourage nurses' motivation to continue their education. For further research, it is recommended to further explore other motivator factors and expand the sample and use a more comprehensive methodology to examine the relationship between motivational factors related to nurse motivation in the context of continuing education.

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RELATIONSHIP BETWEEN STRESS LEVELS AND CHANGES IN RANDOM SUGAR LEVELS IN PATIENTS WITH DIABETES MELLITUS AT MENTIKAN PUBLIC HEALTH CENTER, MOJOKERTO CITY

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ABSTRACT	Keywords
Diabetes mellitus is a metabolic disease characterized by randomly high blood sugar levels. Risk factors that can cause diabetes mellitus include stress, genetic factors, age, and a history of consuming alcohol. The simplest effort to control random blood sugar is by implementing stress management. But in reality, there are still many diabetes mellitus sufferers who cannot manage stress, resulting in random increases in blood sugar levels. This study aims to determine the relationship between stress levels and changes in random blood sugar levels in diabetes mellitus sufferers in the Mentikan Community Health Center, Mojokerto City. This research uses a correlation analytical method with a cross-sectional design. The total sample was 67 respondents taken using the purposive sampling technique. The Spearman Rho test results showed a value of $0.001 < \alpha 0.05$, so it can be concluded that there is a relationship between stress levels and random changes in blood sugar levels in diabetes mellitus sufferers. Meanwhile, the correlation coefficient figure shows a value of 0.663, which means the relationship between stress levels and random changes in blood sugar levels is strong. Stress can increase random blood glucose levels because stress stimulates the body to release the hormones cortisol and epinephrine. These two hormones have a strong effect in causing the process of gluconeogenesis, so that it will increase random blood glucose levels by large amounts within a few minutes. It is hoped that good stress management can control sufferers' sugar levels so as to create a better quality of life for Diabetes Mellitus sufferers.	Diabetes mellitus, Random Blood Sugar, Stress level

INTRODUCTION

Stress is a known contributor to hyperglycemia in those with diabetes mellitus. Cortisol, a hormone that causes increased blood glucose levels, is produced in the bodies of people with diabetes mellitus when they experience stress (Siregar, Simbolon, & Talib, 2020). Patients with diabetes mellitus are very vulnerable to stress. Stress can occur because people with diabetes mellitus have not accepted their condition who are diagnosed with diabetes mellitus. The diabetes mellitus epidemic affects people all over the world. The prevalence of diabetes mellitus is increasing, according to the World Health Organization (WHO), especially in developing countries, reporting that in 2014, 422 million people worldwide had diabetes mellitus, which caused 1.6 million deaths. Forecasts put the figure at 642 million sufferers by 2040. The prevalence of diabetes mellitus in the Indonesian population aged 15 years and older increased over the past five years, from 1.0% in 2013 to 2.0% in 2018, with the highest rate in DKI Jakarta (3.4%) and the lowest in NTT (0.9%), both according to the findings of the Riskesdas study (Ministry of Health of the Republic of Indonesia, 2018). There are currently 10.2 million people with diabetes and 17.9 million people at risk in Indonesia, according to statistics from the Basic Health Research Agency (Indonesian Ministry of Health, 2018). Preliminary studies conducted by researchers at the Mentikan Health Center in Mojokerto City obtained data on the number of DM patients from January to October 2023 as many as 593 DM and Chronic Disease patients. The results of interviews with 7 DM patients found that some patients experienced random increases in blood sugar despite maintaining their diet and daily activities, after being traced some patients said they were tired and stressed about their illness that did not go away and vented about

problems in their lives. This shows that stress factors experienced by patients affect the patient's blood sugar levels. Efforts to deal with stress and reduce blood sugar that the Public Health Center has carried out are gymnastics once a week and routine blood sugar checks every month, from that, researchers are interested in examining the problem of stress and random blood sugar changes in diabetes mellitus patients.

METHOD

The research design is correlation analytic with a cross-sectional approach. The independent variable is the level of stress while the dependent variable is the change in random blood sugar levels in patients with Diabetes Mellitus. The population in this study were all patients with diabetes mellitus at the Mentikan Health Center, Mojokerto City. The sample was a portion of DM patients who fit the research criteria as many as 67 respondents. Sampling method with purposive sampling technique and using Spearman Rho statistical test.

RESULTS

Table 1. Characteristics of respondents based on age, gender, level of education, and duration of DM

Characteristics	Frequency (n=67)	Presents
Age		
41 – 45 years	11	16.4
46 – 50 years	32	47.8
51 – 55 years	17	25.4
56 – 60 years	7	10.4
Gender		
Male	26	38.8
Female	41	61.2
Education		
Primary School	23	34.3
Junior High School	15	22.3

Senior School	High	21	31.3
Collage		8	11.9
Duration of DM			
<5 years		45	67.2
>5 years		22	32.8
Total		67	100

Based on table 1, the age of respondents was mostly 46-50 years old as many as 32 respondents (47.8%). Based on gender, most DM patients are female as many as 41 respondents (61.2%). Based on the level of education, it is more dominated by elementary school education as many as 23 respondents (34.3%). As for the length of time suffering from diabetes, most of them were less than 5 years as many as 45 respondents (67.2%).

Table 2. Cross Tabulation Of The Relationship Between Stress Levels And Changes In Random Blood Sugar Levels In Patients With Diabetes Mellitus

Stress Level	Random Blood Sugar Value							
	Low		Normal		High		Total	
	F	%	F	%	F	%	F	%
Normal	0		7	10.4	1	1.5	8	11.9
Mild	0		5	7.4	1	1.5	6	8.9
Moderate	0		1	1.5	2	2.9	3	4.4
Severe	0		0	0.0	5	7.3	5	7.4
Very Severe	0		0	0.0	2	2.9	2	2.9
Total	0	0	13	19.4	8	11.9	21	31.3

Spearman's rho Sig. (2-tailed) 0,001
Correlation Coefficient 0.663

Based on table 2, data from 8 respondents with normal stress levels, most of the normal blood sugar values were from 7 respondents (10.4%). Of the 6 respondents with mild stress levels, most of the high blood sugar values were 5 respondents (7.4%) and 13 respondents who experienced moderate stress most of the high blood sugar values were 12 respondents (17.9%). 15 respondents (22.3%) who have severe stress levels all have high sugar values. While respondents with very severe stress levels as many as 25 respondents (37.3%) had high blood sugar levels. Based on Spearman's rho test, the p-value is $0.001 < \alpha 0.05$ with a Correlation Coefficient value of 0.663, it can be concluded that there is a relationship between stress levels and random blood sugar levels in patients with diabetes mellitus.

DISCUSSION

1. Stress Levels In Patients With Diabetes Mellitus At Mentikan Public Health Center

Based on Table 1, the stress level of diabetes mellitus patients is mostly severe stress as many as 25 respondents or 37.3%. Stress in adults is higher than stress in adolescents. Along with age, humans experience more and more physical, mental, and social limitations. Patients with physical limitations and cognitive impairments experience barriers to social activities with their friends and experience a decrease in the quality of building important relationships, which can increase the stress experienced. This limited condition can be a trigger for stress (Krsinatuti & Latifah, 2021).

Most respondents aged 46-50 years are included in late adulthood. In late adulthood, certain social needs usually increase, with greater practical support needed to manage the demands of daily

life due to declining physical and cognitive capacity, and greater emotional support needed to cope with grief (Lee et al, 2020). Social frailty is also consistently associated with negative outcomes in late adulthood. This is certainly very likely to cause stress in this age group. With increasing age, individuals will experience many changes both physically, psychologically, and socially. When a stressor is obtained, for example being diagnosed with diabetes mellitus, it can affect the mental status of the respondent. This can have consequences for the survival of respondents both intra-personally and inter-personally. Stress control mechanisms are expected to be implemented immediately before stress increases further. Another factor that affects stress is gender. The results showed that respondents with female gender were far above respondents with male gender, namely 41 respondents (61.2%). Gender plays a role in the occurrence of stress. There are differences in response between men and women when facing conflict. Women's brains have a negative alertness to conflict and stress, in women conflict triggers negative hormones that cause stress, anxiety, and fear. Meanwhile, men generally enjoy conflict and competition, even considering that conflict can provide a positive impetus (Fauzi, 2017). In addition, the level of education also affects a person's stress level. A high level of education tends to cause changes in thinking patterns and outlook on life. A person with a high level of education will experience a change in thinking patterns from traditional to a more advanced direction so that they do not only look at the problem from one side but can be from various points of view (Vierdelina, 2008). Respondents with the

highest level of stress were respondents with elementary school education, 23 respondents (34.3%). Someone with a higher level of education is better able to manage problems that occur because they have better information and knowledge. In addition, respondents with higher education levels are also trained when they get problems and are more organized in dealing with problems. Based on the results of the study, it was found that more respondents who experienced stress in the group began to be diagnosed with diabetes mellitus in the period <5 years as many as 45 respondents (67.2%). Research from Harista (2015) found that chronic diseases such as diabetes mellitus greatly affect the incidence of stress. Patients are required to take insulin therapy for a long period of time and change their food intake. This is likely to cause additional stress that affects the emergence of stress. These results mean that the longer a person has diabetes mellitus, the more accustomed the person becomes to the dietary changes, therapeutic interventions, and lifestyle changes that must be implemented. People who have had diabetes mellitus for a long time tend to have mild levels of distress. This is because the person already has a way of coping mechanisms or adapting better to the state of the disease. Old patients are more understanding and experienced with their disease so they will encourage themselves to be better able to anticipate the occurrence of emergencies or something that might happen to the patient someday (Laila, 2017).

2. Random blood sugar levels in Diabetes Mellitus patients at Mentikan Health Center

Based on the results of the study in table 2, states that respondents with

normal random sugar levels were 13 respondents (19.4%), with and high sugar levels were 54 respondents (80.6%). According to Widiastuti (2020), diabetes mellitus is a condition that is closely related to increased blood glucose levels. The category of metabolic diseases known as diabetes mellitus can be seen from hyperglycemia (randomly high blood sugar levels), the causes of which are insulin secretion abnormalities and insulin dysfunction. One of the factors affecting the increase in random sugar levels is age. According to Sujaya (2009), the increased risk of diabetes along with age, especially at the age of more than 40 years, is due to the aging process that causes the reduced ability of pancreatic β -cells in producing insulin. The results of this study are in accordance with the results of research (Trisnawati et al, 2013) which shows that there is a relationship between age and blood sugar levels where age ≥ 45 years is the most risk of increasing blood sugar levels. This is based on the fact that age can increase the incidence of diabetes mellitus because aging can reduce insulin sensitivity so that it can affect glucose levels in the blood. Generally, humans experience a physiological decline that drastically decreases rapidly at the age after 40 years, one of which has an impact on the pancreas itself.

Diabetes mellitus patients at the age of >45 years are at risk of blood sugar level instability problems due to the aging process and reduced organ function, so promotive, preventive, curative, and rehabilitative measures are needed during treatment to improve a better quality of life. Furthermore, increased blood sugar levels can be caused by gender factors. Gender is a sex difference acquired at birth that differentiates between males and

females. Both men and women are at risk of developing diabetes mellitus. Women have a greater risk of diabetes mellitus than men, because physically women have a greater chance of body mass index. Monthly cycle syndrome (premenstrual syndrome), post-menopause which makes the distribution of body fat easily accumulated due to the hormonal process so that women are at risk of diabetes mellitus (Irawan, 2010). Public knowledge about diabetes mellitus is needed as a foundation for the community in showing diabetes mellitus prevention behavior. Knowledge is also related to the level of education. The higher a person's level of education, of course, the more information they have so that it affects a person's behavior (Notoatmodjo, 2016a).

In addition to the above factors, there is one factor that affects blood sugar values in patients with Diabetes Mellitus, namely the length of time suffering from this metabolic disease. The results showed that patients diagnosed with diabetes mellitus > 5 years there were 45 people with criteria 10 people had normal blood sugar levels and 35 people had high blood sugar levels. Duration of diabetes mellitus is related to digital health literacy. This study found that most people with diabetes mellitus in the range of 1-5 years and have a low level of digital health literacy, where digital health literacy is a form of diabetes mellitus self-management. This is in line with research by Musmulyadi et al (2019) which shows that someone who has just suffered from diabetes mellitus has poor health literacy which is related to the knowledge possessed regarding self-management (self-care) (Musmulyadi et al, 2019).

3. Relationship between Stress Level and Random Blood Sugar Level in Diabetes Mellitus Patients at Mentikan Health Center

Based on table 2, data from 8 respondents with normal stress levels, most of the normal blood sugar values were 7 respondents (10.4%). Of the 6 respondents with mild stress levels most of the high blood sugar values were 5 respondents (7.4%) and 13 respondents who experienced moderate stress most of the high blood sugar values were 12 respondents (17.9%). 15 respondents or (22.3%) who have severe stress levels all have high sugar values. While respondents with very severe stress levels as many as 25 respondents or (37.3%) all had high blood sugar levels. Based on the Spearman's rho test, the p value is $0.001 < \alpha 0.05$ with a Correlation Coefficient value of 0.663, it can be concluded that H_0 is rejected, which means that there is a relationship between stress levels and random blood sugar levels in patients with diabetes mellitus. The results of the Spearman Rho test state that the value of significance / sig. (2-tailed) of $0.001 < \alpha 0.05$, it can be concluded that H_0 is rejected, which means that there is a relationship between stress levels and random blood sugar levels of diabetes mellitus patients at Mentikan Health Center with a correlation coefficient value showing a value of 0.663, which means that the relationship between stress levels and random blood sugar levels of diabetes mellitus patients at Mentikan Health Center is strong with the direction of the relationship is positive, which means in the direction of the heavier the stress level, the higher the blood sugar.

The relationship between stress and increased blood sugar levels is that in a state of stress there will be an increase in

the stress hormones epinephrine and cortisol. Because these hormones will affect the control and level of blood glucose levels. In addition, if there is a stressful situation, the stress response can be an increase in adrenaline hormone which can eventually convert glycogen reserves in the liver into glucose. Continuously high blood glucose levels can cause complications of diabetes mellitus, while the most dangerous acute complication in patients with diabetes mellitus is hypoglycemia (low blood sugar levels) (Gesang & Abdullah, 2019). The cross tabulation data shows that patients with diabetes mellitus who experience the most stress at a very severe level are 25 respondents (37.3%). The more stressed a person is, the more blood sugar values increase. Stress and sugar levels of patients with diabetes mellitus have a close relationship, especially in industrial and urban areas where this research data was taken. The lifestyle of people in urban areas then affects the lifestyle of the community so that it affects both physical and psychological problems.

CONCLUSIONS

The results of the study showed a relationship between stress levels and random blood sugar levels in patients with diabetes mellitus at Mentikan Health Center with a positive relationship direction and the level of relationship with the strong variable. So it can be concluded that the more stressed the respondent, the higher the risk of an increase in random blood sugar levels in patients with Diabetes Mellitus.

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THE ROLE RESILIENCE AND ACADEMIC SELF-EFFICACY IN INCREASING ACADEMIC ENGAGEMENT OF UNDERGRADUATE NURSING STUDENTS

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ABSTRACT	Keywords
Academic Engagement is an important concern considering that nursing students will be directly involved with patients and provide nursing care to patients directly. Ideally, undergraduate nursing students in the emerging adulthood phase have a high level of academic engagement. However, reality shows that there are still many students with relatively low levels of academic engagement. This will later have an impact on low academic achievement, low student competence, increased disengagement and increased drop out rates among students. Previous research results show that academic engagement is related to academic resilience and academic self-efficacy. Therefore, the aim of this research is to determine the influence of academic resilience and academic self-efficacy on the academic engagement of undergraduate nursing students. This type of research is correlational with a cross-sectional approach. The research sample was 312 undergraduate nursing students from STIKes Dian Husada Mojokerto with a sampling technique using stratified random sampling. Statistical analysis uses multiple linear regression. The research results show that academic resilience and academic self-efficacy influence the academic engagement of nursing students.	Academic Resilience; Academic Self-Efficacy; Academic Engagement

INTRODUCTION

Nursing students are educated and supported in dual roles, one in the classroom and one in the clinical environment. Active engagement in both learning halves helps students become more effective, current, and knowledgeable as they become engaged nurses (Hudson, 2015). Engagement is still

evolving today, and is described as active learning that is highly interactive, problem-based in orientation, and encourages participation and contribution from everyone involved. Engagement is an important component of nursing. Higher levels of engagement provide more information and better understanding,

allowing nurses to provide a higher standard of care. Nursing education consists of theoretical and practical education to develop nurses' professional skills and knowledge. These skills and knowledge are, traditionally, taught through face-to-face lectures, laboratory instruction, and clinical rotations. However, the COVID-19 pandemic requires alternative strategies to maintain high-quality nursing education. Oducado & Estoque (2021) suggests that some nursing skills are easier to teach in person than online.

The occurrence of the Covid-19 pandemic has had an impact on the world of education, one of which is the change in learning methods from face-to-face learning to distance learning. However, two years passed and the government implemented face-to-face learning again. This phenomenon will certainly cause challenges not only for lecturers but also for students as participants in the world of higher education. This very rapid change in learning methods causes students to experience academic stress. The academic stress felt by students has an impact on engagement which results in decreased learning motivation during the learning process, such as lack of study concentration, understanding of the material, piling up assignments, as well as interactions with lecturers and peers, decreased lecturer-student interactions, internet connection disruptions, and cancellation of practice or internship (Hill & Fitzgerald, 2020). In addition, compared with face-to-face teaching, distance teaching greatly reduces self-efficacy and academic engagement in learning behavior (Zhang dkk., 2023).

Academic engagement is a positive and satisfying attitude towards work related to a mind characterized by vigor, dedication and absorption. Engagement refers to a more persistent and pervasive cognitive-affective state that is not focused on a particular object, event, individual, or behavior."

Vigor refers to a high level of energy and mental resilience, a willingness to invest energy in one's work, not getting tired easily, and persistence even in the face of adversity. Dedication refers to strong involvement in one's work, accompanied by a sense of significance, enthusiasm, inspiration, pride, and challenge from studies. Absorption refers to a state of total enjoyment at work characterized by time passing quickly and an inability to disengage from work (Schaufeli dkk., 2002). The problem is that there are still many students with relatively low levels of academic engagement, which can have an impact on low levels of academic achievement, length of study, increasing disengagement, and increasing drop out rates among students (Suárez-Orozco et al., 2009; Pattynama et al., 2019; Ketonen et al., 2019).

One of the main issues for higher education in the 21st century is adequate academic engagement at the tertiary level, as this idea is identified with quality assurance and improvement plans throughout the world (Harrington et al., 2021). Ma et al (2021) states that academic engagement is an all-encompassing and diverse event that requires more exploration to turn into useful policies to further develop learning in higher education. In the same vein, it becomes important to recognize the extent to which learners are engaged and the instructive practices that successfully strengthen engagement (Zepke, 2018). Kotera & Ting (2021) stated that the problem of low levels of academic engagement among students is also suspected to be related to the academic resilience experienced by students during the learning process. Academic resilience is contextualized as a construct of resilience and reflects the possibility of increasing student educational success despite adversity. Resilient students are described as individuals who persist in achieving and also have high motivation, especially when

facing stressful conditions, these individuals are able to put themselves at risk of poor performance. Academic resilience is very important when studying academic engagement among undergraduate students (Harrington et al., 2021). Academic resilience is an important quality that helps nursing students, who must engage in learning and clinical practice, to overcome academic stress and adapt to their academic and clinical environments (Hwang & Shin, 2018). In order to overcome obstacles and find solutions throughout their studies and future careers, nursing students are considered to need to have academic resilience (Chow et al., 2020).

Research has noted that Academic resilience is also a potential predictor of learning engagement (Romano et al., 2021). Students with academic resilience tend to demonstrate higher levels of achievement despite risks and difficulties (Simões et al., 2021). Romano et al (2021) argue that students with higher levels of academic resilience demonstrate higher levels of learning engagement. Resilient students are those who re-engage and do not give up when faced with difficult academic tasks. Nonetheless, further research shows that academic resilience is a relevant feature identified in all students who face severe adversity during their academic path (Agasisti et al., 2018). Academic resilience is also seen as the ability to successfully deal with chronic setbacks and difficulties in an academic context (Masten, 2016; Salmela-Aro & Upadaya, 2014). Further research highlights that academic resilience and its components are predictive of higher levels of academic engagement (Tang et al., 2023). Additionally Meta-analysis by Chang & Wu (2019) shows that academic self-efficacy significantly and positively predicts academic engagement and is one of the important factors of academic engagement. Students who have high academic self-

efficacy are students who are confident in their abilities, easily recognize their strengths and potential, and believe they can successfully master the learning material to achieve the expected learning outcomes. Academic self-efficacy, perceived social support has been identified in the literature as an attribute of developing resilience among nursing students, mostly in clinical contexts (Stephens, 2013; Walsh et al., 2020). However, there is still little research that explores the relationship between resilience and academic self-efficacy and academic engagement among nursing students.

METHOD

Study design This type of research is correlational with a cross sectional approach. This research was conducted at STIKES Dian Husada Mojokerto. The population in this study were undergraduate nursing students at STIKES Dian Husada Mojokerto with a sample size of 312 people using stratified random sampling techniques. The inclusion criteria for this research were students who were willing to be research samples. There are three instruments used in this research: (1) academic engagement scale questionnaire, namely the Utrecht Work Student Survey (UWES-9S), (2) academic resilience scale using The Academic Resilience Scale, (3) academic self-efficacy scale using the Academic Self-Efficacy Scale. Efficacy Scale or ASES. Data collection in this research was carried out using a questionnaire. Participants fill out a questionnaire starting from the characteristics of the respondent which include gender, age, academic engagement, academic resilience, and academic self-efficacy. The data analysis technique in univariate analysis uses the mean value for each variable, in bivariate analysis uses simple linear regression analysis, in

multivariate analysis multiple regression analysis is used.

RESULTS

1. Characteristics of research respondents

From the results of research conducted on general research data on the role of resilience and academic self-efficacy in increasing academic engagement of undergraduate nursing students, the following data were obtained:

Table 1. General data characteristics of research respondents

N	Respondent Profile	Frequency	Percentage (%)
1	Gender		
	Male	96	30,77
	Female	216	69,23
2	Age		
	18 years	49	15,71
	19 years	39	12,50
	20 years	41	13,14
	21 years	38	12,18
	22 years	42	13,46
	23 years	38	12,18
	24 years	33	10,58
	25 years	32	10,26
3	Academic Semester		
	Semester 2	68	21,79
	Semester 4	106	33,97
	Semester 6	138	44,23
	Total	312	100

Source: Primary research data, 2024

From the research results, it was found that the majority of respondents in this study were women, namely 216 respondents (69.23%), the majority of respondents in this study were 18 years old, namely 49 respondents (15.71%), and the majority of respondents in this study were level 6 nursing students, namely 138 respondents (44.23%)

2. Academic Self Efficacy

Table 2. Descriptive statistics of academic self-efficacy variables

Statement item	Mean	Minimum	Maximum	Standard Deviation
ASE1	3,240	1,000	7,000	0,821
ASE2	3,635	1,000	6,000	0,765
ASE3	4,051	1,000	7,000	0,729
ASE4	4,237	1,000	6,000	0,719
ASE5	4,804	1,000	6,000	0,802
ASE6	4,824	1,000	6,000	0,668
ASE7	5,327	1,000	6,000	0,723
ASE8	5,468	1,000	7,000	0,746

Source: Primary research data, 2024

Based on Table 2 which has been obtained from the PLS output results. It can be seen that the largest average (mean) value is found in the ASE8 statement item with a value of 5.468, where this number can be interpreted as meaning that the respondents in the study are confident about their ability to succeed in academic learning. From the results of the analysis, it was also found that the lowest average (mean) value was found in the ASE1 statement item with a value of 3.240, where this number can be interpreted as meaning that the respondents in the study were quite capable of scheduling time to complete each lecture assignment given by the lecturer

3. Resiliensi Academic

Table 3. Descriptive statistics of academic resilience variables

Statement item	M	Minimum	Maximum	Standard Deviation
RAC1	3,199	1,000	3,000	0,701
RAC2	3,535	1,000	3,000	0,739
RAC3	3,837	3,000	4,000	0,824
RAC4	3,410	1,000	4,000	0,731
RAC5	3,426	1,000	3,000	0,732
RAC6	3,433	1,000	4,000	0,734
RAC7	3,798	2,000	3,000	0,801
RAC8	3,859	1,000	4,000	0,884
RAC9	3,369	1,000	4,000	0,729
RAC10	3,353	1,000	3,000	0,726
RAC11	3,391	1,000	4,000	0,725
RAC12	3,404	2,000	3,000	0,731
RAC13	3,455	1,000	4,000	0,739
RAC14	3,769	2,000	4,000	0,766
RAC15	3,564	1,000	4,000	0,739
RAC16	3,337	1,000	3,000	0,724
RAC17	3,465	1,000	4,000	0,730
RAC18	3,833	2,000	3,000	0,822
RAC19	3,474	1,000	4,000	0,728
RAC20	3,343	1,000	4,000	0,724
RAC21	3,324	1,000	3,000	0,722

RAC22	3,788	1,000	4,000	0,762
RAC23	3,663	2,000	3,000	0,749
RAC24	3,212	1,000	4,000	0,711
RAC25	3,327	1,000	4,000	0,728
RAC26	3,506	1,000	4,000	0,746
RAC27	3,532	1,000	3,000	0,741
RAC28	3,295	1,000	4,000	0,719
RAC29	3,250	2,000	3,000	0,716
RAC30	3,554	1,000	4,000	0,742

Source: Primary research data, 2024

Based on Table 3 which has been obtained from the PLS output results. It can be seen that the largest average (mean) value is found in the RAC8 statement item with a value of 3.859, where this number can be interpreted as meaning that the respondents in the study were able to perceive that the pressure situation experienced in lectures was a challenge. From the results of the analysis, it was also found that the lowest average (mean) value was found in the RAC1 statement item with a value of 3.199, where this number can be interpreted as meaning that respondents in the research still often ignore the feedback given by lecturers in each lecture.

4. Academic Engagement

Table 4. Descriptive statistics of academic engagement variables

Statement item	M	Minimum	Maximum	Standard Deviation
AET1	4,172	1,000	6,000	0,802
AET2	4,367	2,000	7,000	0,884

	4,3			
AET3	51	1,000	7,000	0,822
	4,1			
AET4	66	3,000	7,000	0,796
	4,0			
AET5	96	1,000	7,000	0,719
	4,1			
AET6	06	1,000	6,000	0,803
	4,3			
AET7	28	1,000	7,000	0,811
	4,1			
AET8	21	1,000	6,000	0,766
	4,1			
AET9	43	1,000	6,000	0,782

Source: Primary research data, 2024

Based on Table 4 which has been obtained from the PLS output results. It can be seen that the highest average (mean) value is found in the AET2 statement item with a value of 4.367, where this number can be interpreted as meaning that the respondents in the study felt enthusiastic and were able to take part in every course taught by the lecturer in the lecture. From the results of the analysis, it was also found that the lowest average (mean) value was found in the AET5 statement item with a value of 4.096, where this number can be interpreted as indicating that the respondents in the study were still unable to raise their enthusiasm for attending lectures after waking up from sleep in the morning.

5. Inferential Analysis

Inferential analysis is an analytical technique that is used to determine how far the results obtained are similar to the results of the entire population. The tool for analyzing data in this research is using Partial Least Square

a. Measurement Model (Outer Model)

The outer model has each indicator block associated with its latent variable. Designing a measurement model to determine the nature of the indicators as well as each latent variable, whether reflexive or formative in the results. The basis is

based on theory, previous empirical research, or rationale. Based on data analysis, it was found that the academic self-efficacy and academic resilience variables had a loading factor value of > 0.7 , which shows that they have met the requirements to be valid and have no problems because the loading scale of 0.5 - 0.6 is still acceptable at this stage. development (Ghozali, 2014). The output results of the outer model show that the lowest loading factor value for each variable indicator is ASE1, ASE2, RAC1, and RAC24 where this value is still acceptable because it is above the loading scale of 0.5 in line with Ghozali's explanation above and it can be concluded that all The question instrument in this research has a loading factor value above 0.5 and the research can be continued

b. Validity test

Based on the results of the validity test, it shows that the loading factor value is above 0.50. From the test results, the highest value was obtained, namely in the RAC8 statement item, which was 0.882, then the lowest value in the validity test results was in the RAC1 question item, which was 0.548, where of all the indicators in the loading factor, all reflective variables showed values above 0.50, so it can be said to be valid and has met the requirements of the convergent validity test and this research questionnaire correctly measures the variables in this research

c. Discriminant Validity Test

Table 5. Average Variance Extracted (AVE)

Variable	AVE	Rule of Thumb	Result
Academic Self-Efficacy	0,721	> 0,50	Valid
Academic Resilience	0,654	> 0,50	Valid
Academic Engagement	0,618	> 0,50	Valid

Source: Primary research data, 2024

Based on Table 5, the Average Variance Extracted for all variables has a value of > 0.5, where the lowest AVE value is in the academic engagement variable with a value of 0.618 and the highest AVE value is in the academic self-efficacy variable, namely with a value of 0.721. This variable has a value above 0.5 so that the variable can be declared valid and further data testing can be carried out.

d. Reliability Test

Table 6. Reliability test results

Variable	Composite Reliability	Cronbach's Alpha
Academic Self-Efficacy	0,939	0,921
Academic Resilience	0,948	0,941
Academic Engagement	0,940	0,930

Source: Primary research data, 2024

e. Coefficient of Determination Test

Table 7. Coefficient of determination test results

Variable	R Square	R Square Adjusted
Academic Engagement	0,873	0,868

Source: Primary research data, 2024

The coefficient of determination (R-Square) in this study functions to measure the extent of the model's ability to explain variations in the dependent variable. R Square is an indicator that describes how much variation there is in the model. Based on Table 7, the contribution of the independent variables, namely the Academic Self-Efficacy and Academic Resilience variables, to the dependent variable, namely the Academic Engagement variable, is 0.873 or 87.3%, while the remaining 13.7% is influenced by variables outside the variables studied in the this research.

6. Test the research hypothesis

Table 8. Results of research hypothesis testing / T test

	Original Sample (O)	T Statistic	P Values
Academic Self-Efficacy → Academic Engagement	0,173	3,362	0,002
Academic Resilience → Academic Engagement	0,154	2,402	0,016

Source: Primary research data, 2024

DISCUSSION

a. The influence of academic self-efficacy on academic engagement

Based on the t test results in table 8, it can be seen that the test results on the academic self-efficacy variable on academic engagement have a positive relationship. This can be seen from

the correlation value or original sample value of 0.173. If we look at the results of the t statistical test, the data results show $t \text{ count } 3.362 > t \text{ table}$ so it can be concluded that the academic self-efficacy variable has an effect on academic engagement. This is proven by the P-Values or significant value of 0.002

The results of this study are similar to research conducted by Putri & Alwi (2023) where from the results of the research carried out, it was found that the joint correlation coefficient value between variables (R) was 0.352, the calculated f value was 57.321 with a significance level of 0.000, or $p < 0.05$ which shows that there is a significant influence between academic self-efficacy on students engagement. Similar research conducted by Ansyar et al (2023) where from the results of hypothesis testing on the correlation between self-efficacy variables and student engagement, the correlation coefficient value is 0.406 and the significance value is 0.000, so this research concludes that there is a positive relationship between self-efficacy and student engagement in students MAN Pinrang.

Bandura (1977; Gusti et al., 2023) states that self-efficacy has a direct influence on an individual's ability to mobilize motivation, cognitive abilities, and necessary behavior or actions such as selecting activities, situations, and determining how much effort will be exerted and how long the individual will persist in facing a challenge. Ormrod (2008; Gusti et al., 2023) also stated that academic self-efficacy is one of the factors that influences goals, efforts, activity selection, and persistence in

activities in class or learning. Lidiawati (2015; Gusti et al., 2023) stated that when students are confident in their ability to organize and execute steps to achieve their goals (in this case academic achievement) then students will be more committed and tend to maintain their efforts in difficult situations, find the right study friends, and a conducive place to study. , and can better strive to create an effective learning environment

Gibbs & Poskitt (2010; Putri & Alwi, 2023) stated that self-efficacy influences engagement, achievement and learning outcomes. Individuals with high academic self-efficacy persist longer, carry out appropriate learning behavior, such as participating more actively in learning, completing assignments, being more diligent, and successful than individuals with low academic self-efficacy. A nursing student who has confidence in his ability to carry out an assignment given by the lecturer will have a higher level of involvement in the assignment. Nursing students who have high academic self-efficacy will carry out self-monitoring and self-management in the learning process and find and apply effective strategies to solve problems in a timely manner, so that they can achieve learning goals

Increasing academic self-efficacy possessed by nursing students can influence student activity in generating academic engagement during the learning process. Conditions like this can arise because students feel capable of understanding every material presented, carrying out every assignment given, and carrying out every academic prerequisite

action imposed during their nursing education. When this condition occurs, it can be ensured that the nursing students are able to generate academic engagement within themselves. High academic self-efficacy will trigger an increase in students' self-confidence and encourage the emergence of positive inner energy. When this condition occurs, nursing students will be motivated to be more actively involved academically during the learning process.

b. The influence of academic resilience on academic engagement

Based on the t test results in table 8, it can also be seen that the test results on the academic resilience variable on academic engagement have a positive relationship. This can be seen from the correlation value or original sample value of 0.154. If we look at the results of the t statistical test, the data results show $t_{count} 2.402 > t_{table}$ so it can be concluded that the academic resilience variable has an effect on academic engagement. This is proven by the P Values or significant value of 0.016

The results of this study are similar to research conducted by Zarinathi & Huwae (2024) where from the results of the research conducted, it was found that the significance value was $0.000 < \alpha (0.05)$ with a correlation coefficient of 0.469, so this research concluded that there was a correlation between academic resilience and academic engagement

Active student involvement academically will influence student academic engagement at the lecture site. Students who have high academic resilience tend to find it

easier to adapt to new things or learning material presented by lecturers in each lecture. Considering the importance of academic resilience, a nursing student is required to be able to be involved academically in every learning process carried out (Zulfikar, 2022). Nursing students who are able to increase their involvement in academics, indirectly this condition will reduce several negative conditions that may arise in students such as being lazy to take part in lecture activities in class, being lazy about going to campus, tending to commit violations of applicable rules, not pay attention to every material presented by the lecturer, and ignore every assignment given by the lecturer in the course. The most serious condition that is possible to occur when students are unable to engage academically in learning is that students will not be able to pass the practical exams carried out in nursing courses. When this condition occurs, it is certain that students will not have the competence to carry out field practice in health service facilities and provide nursing care to patients according to their needs.

According to researchers' assumptions, academic resilience is an important factor when a teenager decides to pursue nursing education at a health institution. This cannot be separated from the learning materials and practices that the students will face later. Nursing education is a planned effort that is carried out structurally and systematically to produce reliable and competent nursing staff. Apart from being required to be able to provide appropriate nursing services, a nurse

is also required to be able to make quick decisions in treating patients, especially patients with critical conditions. In order to be able to do this, every nursing student will be given basic nursing material as a starting point for learning. Furthermore, nursing students will be given advanced nursing material to handling patients in critical conditions. During this learning process, students will of course be actively involved in academic activities. It is not uncommon for nursing students to have to give up their time to be on campus and take part in laboratory practicums that are required as part of the learning process.

The high amount of time and energy required to pursue nursing education indirectly requires high academic resilience from nursing students. This is important because without adequate academic resilience, nursing students will not be able to achieve high academic engagement. The student's ability to follow each stage of nursing learning will produce satisfaction for the student. It is not uncommon for students to think that the difficulties and challenges they face during the learning process are something that is satisfying for them, although there are also nursing students who are unable to experience this process. When nursing students are able to improve or maintain their academic resilience, then indirectly nursing students will have high academic engagement

CONCLUSIONS

From the research results, several conclusions were obtained as follows :

1. There is an influence of academic self-

efficacy on the academic engagement of nursing students with a p value of 0.002 with a correlation coefficient of 0.173

2. There is an influence of academic resilience on the academic engagement of nursing students with a p value of 0.016 with a correlation coefficient of 0.154

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BEHAVIORAL COUNSELING MODEL FOR IMPROVING HEMOGLOBIN LEVELS IN ADOLESCENT GIRLS WITH ANEMIA

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ABSTRACT	Keywords
<p>This study aims to analyze the impact of Behavioral Counseling on haemoglobin improvement in adolescents with anaemia in Palopo City. The research employed a pre-experimental method with a one-group design (pretest-posttest) approach, where haemoglobin levels were measured before the intervention (P1), followed by four intervention sessions over four weeks. After the intervention, haemoglobin levels were measured again (P2). The study was conducted at SMAN 05 Palopo City. The population and sample consisted of 60 female adolescents with anaemia. Research instruments included observation sheets and questionnaires. Data collection involved two measurements, before and after the intervention. Data analysis was performed using the Wilcoxon test with a 95% significance level. The results showed that the mean haemoglobin level before the intervention was 10.3 g/dL, which increased to 11.6 g/dL after the intervention, indicating an improvement of 1.3 g/dL. Based on statistical testing using the Wilcoxon test, a value of $p = 0.000 < \alpha = 0.05$ was obtained. It means that the behavioural counselling model significantly improved haemoglobin levels in adolescent girls with anaemia. In conclusion, behavioural counselling can serve as a practical and effective strategy to help adolescents change unproductive behaviours into more positive ones and improve health, particularly in treating and preventing anaemia.</p>	<p><i>Behavioral Counseling; Hemoglobin; Adolescent Anemia</i></p>

INTRODUCTION

Adolescent health is a critical indicator in determining the success of national health development, particularly in preparing future generations. This aligns with the

Sustainable Development Goals (SDG), which aim to end hunger, including addressing the nutritional needs of adolescent girls. The government has implemented cross-sectoral and cross-

program policies to support healthy and productive adolescent growth, covering sexual and reproductive health, mental health, child protection, and youth development. These efforts are following the National Medium-Term Development Plan (RPJMN) 2020–2024 and the National Priority in the 2021 Government Work Plan (RKP) to improve the quality and competitiveness of human resources (Taufiq et al., 2020).

One of the significant health challenges faced by adolescents is the high prevalence of anaemia, a global health issue. It is reported that 1 in 4 adolescent girls suffers from anaemia (Taufiq et al., 2020). Globally, the prevalence of anaemia among females aged 15 years is 28%, while in Indonesia, it is 48.9% (Ministry of Health, Indonesia, 2019, 2020). In certain regions, such as Java, the prevalence of anaemia among adolescent girls is 45.1%, while in South Sulawesi, it is 26.1% (Nasaruddin et al., 2021). These figures are closely linked to the coverage of iron supplement (Tablet Tambah Darah, TTD) distribution among adolescent girls. Over the past two years, the coverage has decreased from 46.56% in 2019 to 39.1% in 2020. In South Sulawesi, the coverage declined slightly from 58.41% in 2019 to 58.9% in 2020 (Kementerian Kesehatan RI, 2019, 2020). In Palopo City, the TTD coverage was 58.5% in 2019, dropping to 56.5% in 2020. The World Health Organization (WHO), during the 65th World Health Assembly (WHA), set a global action plan and target to reduce anaemia prevalence among women of reproductive age by 50%, including adolescent girls aged 15 years and older.

Anaemia occurs when haemoglobin levels fall below the average threshold of 12 g/dL (Pramestiyani, 2023). Haemoglobin, a key component of red blood cells, is crucial in transporting oxygen to all body tissues and supporting organ growth and

development. Adolescents, especially girls, are particularly vulnerable to anaemia due to puberty and menstruation, which result in significant blood loss and iron depletion. This condition is further exacerbated by poor dietary habits, as adolescents often fail to meet their daily iron requirement (Gita et al., 2019).

Anaemia has long-term detrimental effects on the quality of human resources in Indonesia and poses a significant global challenge in the health, social, and economic sectors. Adolescent girls with anaemia are at risk of becoming anaemic mothers in the future (Kementerian Kesehatan RI, 2018; Taufiq et al., 2020). Since adolescent girls are the future mothers who will raise the next generation, addressing anaemia is vital. Anaemia can be diagnosed through blood tests and is often associated with symptoms such as weakness, fatigue, and difficulty concentrating, collectively referred to as the "5 Ls" (lethargy, listlessness, weakness, fatigue, and carelessness), along with dizziness, blurred vision, and drowsiness due to inadequate oxygen supply to the brain and muscles.

The government has implemented the distribution of iron supplements (TTD) to combat anaemia in adolescent girls. This initiative aims to meet the iron needs of adolescent girls, ensuring that future mothers receive sufficient iron from an early age. Adequate iron intake is expected to reduce the incidence of anaemia in pregnant women, minimize the risk of haemorrhage during childbirth, and prevent low birth weight (LBW) and stunted growth in children (Kementerian Kesehatan RI, 2019). However, this measure has yet to reduce the prevalence and significantly prevent anaemia among adolescents, indicating the need for additional efforts to address the problem. Despite the implementation of the TTD program in 2016, the prevalence of anaemia among adolescents in Palopo City

remains high. Moreover, preliminary surveys conducted by the researchers revealed that many adolescents had never received nutritional counselling, and their health education was limited to mass lectures conducted by health workers in schools.

A more targeted approach focused on promotional and preventive activities, such as adolescent behavioural counselling, is needed to address this issue. Behavioural counselling involves a process where counsellors guide clients using behavioural approaches to improve iron intake, supplementation, and fortify food with iron and folic acid (Juffrie et al., 2020). Adolescent counselling is a face-to-face process in which a counsellor helps adolescents address issues related to their nutritional and reproductive health (Suryani & Sulastri, 2021). It encourages adolescent behaviour and influences them to improve their health and achieve optimal well-being (Kementerian Kesehatan RI, 2018).

This research's novelty (state of the art) builds upon previous studies, which have demonstrated the effectiveness of leaflets and counselling in increasing adherence to iron supplement intake among pregnant women with anaemia. Increased adherence to medication and daily consumption of protein-rich foods significantly improved haemoglobin levels ($P < 0.05$) (Vernissa et al., 2017). Additionally, nutritional education for adolescents with anaemia led to improved dietary choices (Margawati & Iriantika, 2017). and there was a significant difference in knowledge and attitudes before and after nutritional counselling ($P < 0.05$) (Ravin, 2019).

Previous studies show that no research has focused explicitly on adolescent behavioural counselling to improve haemoglobin levels as a strategy to reduce and prevent anaemia among adolescent girls, particularly in Palopo City. The research question

addressed in this study is whether nutritional counselling can improve haemoglobin levels in adolescents with anaemia in Palopo City. The objectives of this study are (1) to identify haemoglobin levels in adolescents with anaemia in Palopo City before and after the intervention and (2) to analyze the impact of nutritional counselling on improving haemoglobin levels in adolescents with anaemia in Palopo City. This research aims to provide guidance for interventions to address anaemia among adolescents and to contribute to the prevention of anaemia, ultimately improving the quality of human resources (Healthy Adolescents, Anemia-Free).

METHOD

This study utilized a pre-experimental design with a one-group pretest-posttest approach. The respondents' haemoglobin levels were measured before the intervention (pre-test) and again after the intervention (post-test).

The population and sample of this study consisted of adolescent girls with anaemia from SMAN 05 Palopo City. The sample was selected using simple random sampling. The sample size, calculated using the Lemeshow formula, included 60 adolescent girls. The sample criteria were: (1) adolescent girls aged 15-17 years with anaemia; (2) no chronic illnesses; (3) not undergoing any medical treatment; and (4) willing to participate as respondents. The research instruments included an observation sheet to record haemoglobin measurements before (pre-test) and after (post-test) the intervention and materials used during the behavioural counselling intervention at each meeting with the respondents. Additionally, a questionnaire was prepared to assess respondents' dietary patterns as an intermediate variable. The questionnaire underwent validity and reliability testing. Counselling media

consisted of flipcharts developed based on literature studies and adapted from tools used in health facilities like community health centres (puskesmas) or clinics. The media were reviewed for feasibility by experts in midwifery and nutrition.

Data collection involved both primary and secondary data. Primary data were obtained from haemoglobin (Hb) measurements before and after the intervention, and in-depth interviews with selected respondents were conducted to reinforce the findings. Secondary data were gathered from related data on the prevalence of anaemia among adolescents. Data analysis included univariate analysis to assess the normality of each variable and bivariate analysis to explore the relationships between variables. Paired t-tests were used, with a significance level of 95%. Data was analyzed using the Statistical Product and Service Solutions (SPSS) software.

RESULTS

Table 1. Average Weight and Height of Respondents

Anthropometric Measurements	Mean	Minimum - Maximum
Weight	41,4	38 – 46 kg
Height	142,2	136 – 146 cm

Sumber: data primer

Table 1 shows the average anthropometric measurements, specifically the indicators of weight and height. The respondents' mean weight was 41.4 kg, while their average height was 142.2 cm.

Table 2. Data Normality Test

Hemoglobin Levels	Rerat a (gr/dl)	Minimum - Maksimu m	Nilai p
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Before intervention (Measurement I)	10,3	9,50 – 11,1	0,004 *
After intervention (Measurement II)	11,5	10,10 – 12,6	0,000 *

*Analitik Shapiro-Wilk

According to Table 2, the normality test results indicate that the mean haemoglobin level before the intervention was 10.3 g/dl with a p-value of 0.004, less than α (0.05). After the intervention, the mean haemoglobin level increased to 11.5 g/dl with a p-value of 0.000, less than α (0.05). It indicates that the data were not normally distributed, making a paired t-test inappropriate.

Table 3. Frequency Distribution of Eating Patterns, Snacking Habits, and Physical Activity Before and After the Intervention

Indikator	Before Intervention (Frequency/Percentage)	Setelah Intervensi (Frekuensi/Persentase)
Frequency of meals per day		
2 times	5 (10,0%)	3 (5,0%)
3 times	45 (75,0%)	40 (66,7%)
> 3 kali	9 (15,0%)	17 (28,3%)
Iron-rich food consumption (per week)		
1 times	4 (6,7%)	0 (0,0%)
2 times	12 (20,0%)	5 (8,3%)
3 times	37 (61,7%)	20 (33,3%)
> 3 time	7 (11,7%)	35 (58,4%)
Vitamin C consumption habits		
Never	11 (18,3%)	3 (5,0%)
Sometimes	40 (66,7%)	19 (31,6%)

Indikator	Before Intervention (Frequency/Percentage)	Setelah intervensi (Frekuensi/Persentase)
Always	9 (15,0%)	38 (63,4%)
Fast food consumption (per week)		
1 times	7 (11,7%)	7 (11,7%)
2 times	4 (6,7%)	4 (6,7%)
3 times	7 (11,7%)	30 (50,0%)
4 times	39 (65,0%)	19 (31,6%)
5 times	3 (5,0%)	0 (0,0%)
Fried food consumption (per week)		
5 times	19 (31,6%)	22 (36,6%)
> 5 times	41 (68,4%)	38 (63,4%)
Green vegetable consumption (per week)		
Never	15 (25,0%)	5 (8,3%)
1 time	35 (58,3%)	20 (33,3%)
2 times	10 (16,7%)	35 (58,4%)
Tea/coffee consumption with meals		
Never	12 (20,0%)	35 (58,4%)
Sometimes	33 (55,0%)	20 (33,3%)
Always	15 (25,0%)	5 (8,3%)
Water consumption		
< 1 liter	15 (25%)	10 (16,7%)
1 liter	35 (58,3%)	15 (25%)
2 liters	10 (16,7%)	35 (58,3%)
Snack consumption (per week)		
< 3 times	10 (16,7%)	20 (33,3%)
3 – 4 times	38 (63,3%)	35 (58,4%)
5 – 6 times	12 (20,0%)	5 (8,3%)
Sweet food/drink consumption		

Indikator	Before Intervention (Frequency/Percentage)	Setelah intervensi (Frekuensi/Persentase)
< 3 times	8 (13,3%)	21 (35%)
3 – 4 times	39 (65,0%)	30 (50%)
5 – 6 times	13 (21,7%)	9 (15%)
Physical activity (per week)		
Never	35 (58,3%)	10 (16,6%)
1 time	19 (31,7%)	37 (61,7%)
2 times	6 (10,0%)	13 (21,7%)
Fatigue/weakness complaints		
None	0 (0,0%)	35 (58,4%)
Sometimes	47 (78,3%)	20 (33,3%)
Often	13 (11,7%)	5 (8,3%)

Sumber: data primer

Based on Table 3, it shows that there was an improvement after the intervention, which included the following: regular meal frequency (≥ 3 times per day), consumption of iron-rich foods ≥ 3 times per week, an increased habit of consuming vitamin C, reduced weekly consumption of fast food (to 3 times per week), reduced frequency of eating fried foods, an increase in the consumption of green vegetables to 2 times per week, a decrease in the habit of drinking tea/coffee with main meals to occasionally or never, an increase in the habit of drinking water to 2 liters per day, a reduction in snacking frequency (to 4 times per week), a decrease in the consumption of sweet foods and drinks to 3 times per week, increased physical activity and other habits (to 1-2 times per week), and a reduction in frequent complaints of fatigue and lethargy,

to the point where such complaints were no longer felt.

Table 4. Effect of Behavioral Counseling Model on Hemoglobin Increase in Anemic Adolescent Girls

HemoglobinMedia Level (gr/dl)n	Difference (SD)	Min- Max	p-value
Before interventi on (n=60)	10,3	9,50 —	0,000 *
After interventi on (n=60)	11,6	11,1 10,10 12,6	
	1,3		

*Uji wilcoxon (negative ranks (3^a); positive ranks (55^b); ties (2^c))

Based on Table 4, it shows that the average hemoglobin level before the intervention was 10.3 g/dl, and after the intervention, it increased to 11.6 g/dl. This indicates an increase in hemoglobin levels after the intervention of 1.3 g/dl. According to the results of the statistical test using the Wilcoxon test, the obtained value is $p = 0.000 < \alpha = 0.05$. Additionally, from the positive ranks, 55 respondents experienced an increase in hemoglobin levels after the intervention, with 2 respondents having stable values (ties) and 3 respondents showing a decrease in hemoglobin levels (negative ranks). This means that there is an effect of the behavioral counseling model on the increase of hemoglobin in adolescent girls with anemia. Similarly, from a clinical perspective, the behavioral counseling model has a significant effect on increasing hemoglobin in adolescent girls with anemia, as evidenced by the significant increase of 1.3 g/dl, bringing the average hemoglobin level closer to the normal value of 12 g/dl.

DISCUSSION

Based on the research findings, the mean haemoglobin level before the intervention was 10.3 g/dL. After the intervention, the haemoglobin level

increased to 11.6 g/dL, showing an increase of 1.3 g/dL. The statistical test results using the Wilcoxon test produced a p -value = 0.000, which is less than $\alpha = 0.05$. Of the 60 respondents, 55 experienced increased haemoglobin levels, 2 had no change (ties), and 3 experienced a decrease (hostile ranks). It indicates that the behavioural counselling model increased haemoglobin levels in adolescent girls with anaemia. From a clinical perspective, the behavioural counselling model also had a significant impact, as haemoglobin levels increased by 1.3 g/dL, approaching the average value of 12 g/dL.

This finding is supported by the Behavioral Change Theory developed by Prochaska and DiClemente (1983), which suggests that behaviour can be learned, modified, and improved through structured interventions. Behaviour change occurs through stages: pre-contemplation, contemplation, preparation, action, and maintenance (Refnandes, 2023). In the pre-contemplation stage, individuals are unaware that their behaviour is problematic. In the contemplation stage, individuals begin to consider the need for change. In the preparation stage, individuals decide to make changes. The action stage is when individuals start implementing the changes. Finally, in the maintenance stage, the changes are sustained (Agung et al., 2023; Lesmana, 2019; Ulfiah, 2020). In this study, the counsellor first identified behaviours that caused or worsened anaemia. Adolescent girls who initially were unaware of the importance of a healthy diet might be in the pre-contemplation stage. Through behavioural counselling, they moved into the action stage, where they began adopting healthier eating habits and increasing physical activity. Next, individuals were taught self-monitoring, or self-observation of eating patterns and related habits (Agung et al., 2023). The adolescent girls were

encouraged to record the food they consumed and their energy levels over time. With the counsellor's support, they could evaluate whether the changes led to the desired outcomes, namely an increase in haemoglobin levels. Counselling aimed to help them maintain these changes, as reflected by the increase in haemoglobin.

These findings are consistent with previous research by (Rahman et al., 2023) which demonstrated that counselling through e-health effectively increased haemoglobin levels in adolescent girls to a point where they no longer experienced anaemia, meaning their haemoglobin levels returned to normal. Similarly, a study by (Nagamitsu et al., 2022) found that the behavioural counselling approach as a health promotion intervention effectively reduced adolescent depression (Cohen & Powers, 2024).

The behavioural counselling used in this study focused on increasing awareness and motivation for individuals to change daily habits. This approach included education on the importance of iron intake, a healthy diet, and lifestyle habits that support blood health. Through this approach, counselling encouraged participants to address harmful behaviours, such as consuming fast food and beverages that inhibit iron absorption. It is consistent with the findings showing improvements after the intervention, including more regular eating patterns (≥ 3 times daily). Regular eating improves calorie and nutrient intake, which is necessary for red blood cell and haemoglobin production (Hariyanto et al., 2022). The consumption of iron-rich foods ≥ 3 times per week also increased. Iron is essential in haemoglobin production, and a higher intake of foods like red meat, green vegetables, and grains directly helps increase haemoglobin levels (Cohen & Powers, 2024). The habit of consuming vitamin C became more frequent. Vitamin C aids in the body's absorption of non-heme

iron (plant-based iron). Increased vitamin C consumption contributed to the effectiveness of iron absorption (Riccioni et al., 2003). The frequency of fast-food consumption decreased to 3 times per week. Fast and fried foods are often low in nutrients, especially iron and vitamins needed for haemoglobin production. Reducing the consumption of such foods allowed the body to focus on getting quality nutrition (Rahmawati et al., 2020). The frequency of green vegetable consumption increased to 2 times per week. Vegetables such as spinach, moringa, and mustard greens are rich in iron and other vitamins that support red blood cell production (Hariyanto et al., 2022). The habit of drinking tea/coffee with main meals also decreased, sometimes even stopping altogether. The habit of drinking water increased to 2 litres per day for most participants. Adequate hydration helps organs, including those responsible for blood production, function properly (Dutra-De-Oliveira et al., 2011). The frequency of snack consumption per week largely decreased to 4 times per week, and the frequency of consuming sugary foods and beverages decreased to 3 times per week. Excessive sugar intake can interfere with iron and vitamin absorption. Reducing sugar consumption allows the body to utilize essential nutrients better to increase haemoglobin levels (Fitripancari et al., 2023). Physical activity and other habits increased to 1-2 times per week. Light to moderate physical activity stimulates red blood cell production by improving blood circulation, which impacts haemoglobin production; therefore, adolescents are encouraged to engage in physical activity (Nam et al., 2023). Finally, complaints of fatigue and lethargy decreased or disappeared altogether.

The application of the behavioural counselling model in this study is based on various health psychology theories that emphasize the importance of awareness, motivation, habit change, and social support. Through this process, adolescent girls with anaemia could change their daily habits, such as improving their healthy eating patterns and leading more active lifestyles, ultimately impacting the increase in haemoglobin levels. The 1.3 g/dL increase in haemoglobin found in this study shows that behaviour change, when supported by appropriate counselling, can significantly improve the health status of adolescent girls with anaemia.

CONCLUSIONS

Behavioural counselling can be an effective and practical strategy to help adolescents transform unproductive behaviours into more positive ones and improve health, particularly in the management and prevention of anaemia. This approach encourages adolescents to modify their eating behaviours to be healthier, enhance treatment adherence, and adopt lifestyles that support increased haemoglobin levels. Therefore, behavioural counselling has the potential to create a generation of adolescents who are more aware of the importance of health and nutrition and can manage their health independently.

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THE INFLUENCE OF HEALTH EDUCATION ON DROUGHT DISASTER MITIGATION KNOWLEDGE

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ABSTRACT	Keywords
Disaster health education is included in disaster mitigation which aims to increase public knowledge and minimize casualties caused when a disaster occurs. School-aged children are a vulnerable group who are still unfamiliar with disaster knowledge, so there is a need for health education about disasters. The aim of the research is to determine the influence of health education on students' knowledge of drought disaster mitigation. This research uses a Pre-Experimental research type that uses a One-Group Pre-Test and Post-Test Design, and uses a total sampling technique with a sample size of 46 respondents. The results of the research before being given health education showed that 29 (63.0%) respondents were at a good level of knowledge with an average score of 10.17. The research results after being given health education increased students' knowledge level, namely 41 (89.1%) respondents had good knowledge with an average score of 11.93. The data analysis used was the Wilcoxon test, with a significance level of $\alpha=0.05$, the result was $p\ 0.000<\alpha$ so that H_0 was rejected and H_a was accepted. From these results it can be concluded that there is an influence of health education on students' knowledge of drought disaster mitigation.	Health Education, Knowledge, Drought Disasters

INTRODUCTION

The unitary state of the Republic of Indonesia is a country with the equator at a cross position between two continents and two oceans and is located at 6° north latitude-11° south latitude and 95° east longitude-141° east longitude and has geographical, geological, hydrogeological conditions, as well as demographics that are

prone to disasters (BNPB, 2020). One of them is a drought disaster, this can occur because the prevailing climate in Indonesia is monsoon which is known to be sensitive to changes in ENSO or El-Nino Southern Oscillation (Mediani A et al., 2019). Drought itself is a disaster that occurs slowly and can last for a long time, this is due to the

nature of drought disasters which arise in a crawling manner.

Disasters can happen at any time and to anyone, whether children, adults or the elderly. School-aged children are one of the vulnerable groups most at risk of being affected by disasters, this is because there is still a lack of understanding of the risks around them which results in a lack of knowledge about disasters, especially the mitigation stages (Lestari R T P et al., 2020). Elementary school students are in middle childhood, during middle childhood they will be very psychologically vulnerable and have the possibility of experiencing stress due to disasters. In this case, it is very important to increase understanding through early knowledge.

Based on the Decree of the Regent of Sukoharjo No. 360/358 of 2023 concerning the Emergency Alert Status for Drought, Forest and Land Fires from 1 June to 30 September 2023, Bulu District is one of the sub-districts included in this status. In Bulu sub-district there are several villages that experience water difficulties during the dry season, one of which is Kamal village and Kunden village which have the same geographical location, namely being in the highlands, apart from that, according to the latest BPBD data dropping clean water for Sukoharjo Regency until January 5 2024 In Kamal village there were 240 people affected and in Kunden village there were 650 people affected. This is the basis for researchers in conducting research on public elementary school students in the village.

From the results of a preliminary study conducted on December 16 2023 at one of the elementary schools in Bulu District which is in an area with emergency alert status for drought disasters in grades 5 and 6, it was found that 16 students still felt confused and did not understand the drought disaster even though they had previously received socialization or encouragement.

Apart from that, the results of the interview with the school principal showed that the elementary school environment experienced difficulties in clean water due to the dry season for the last 5 to 6 months, even from 3 sources of water access points it was difficult to get out, drought occurred every time. The aim of the research was to determine the influence of health education on knowledge of mitigation. drought disaster for students in the school area. From the results of this preliminary study, the author is interested in conducting research with the title "The Effect of Health Education on Students' Knowledge of Drought Disaster Mitigation".

METHOD

This research is a type of Pre-Experimental research that uses a One-Group Pre-Test and Post-Test Design, with the disclosure of cause and effect relationships by involving one group of subjects, without a comparison group. The research was conducted in April-June 2024 on 46 respondents with a total sampling technique consisting of students in grades 5 and 6. The instrument used in the research was a questionnaire consisting of 14 valid statements with the results of the validity test being r calculated > 0.3440 and the reliability test results are $0.747 > 0.60$, so the statement can be said to be reliable.

RESULTS

Univariate Analysis

Table 1. Characteristics of Respondents

Characteristics of Responden	Frequency	%
Age		
10 years	2	4.3
11 years	22	47.8
12 years	17	37.0
13 years	4	8.7
14 years	1	2.2

Total	46	100
Gender		
Male	31	67.4
Female	15	32.6
Total	46	100
Class		
Class V	17	37.0
Class VI	29	63.0
Total	46	100

The majority of respondents were aged 11 years, 22 (47.8%) respondents

Table 2. Descriptive pre-test and post-test statistics

Descriptive Statistics	Pre-Test	Post-Test
Mean	10.17	11.93
Standard Error	0.251	0.244
Median	10.50	12.00
Mode	11	13
Standard Deviation	1.704	1.652
Sample Variance	2.902	2.729
Kurtosis	-0.611	-0.563
Skewness	-0.312	-0.541
Range	7	6
Minimum	6	8
Maximum	13	14
Sum	468	549

In this data, it is known that the mean value before being given health education was 10.17 and after being given health education the mean value increased to 11.93. For the median value before being given health education, namely 10.50, after being given health education, the median value is 12.00. The mode value before being given health education was 11 and after being given health education was 13.

Table 3. Pre-test knowledge level

No	Characteristics	Frequency	%
1.	not enough	0	00.0
2.	enough	17	37.0
3.	good	29	63.0
Total		46	100.0

The level of knowledge of respondents before being given health education on drought disaster mitigation was mostly in the good category at 29 (63.0%) respondents with an average value of 10.17. Even though the majority of respondents are in the good and sufficient knowledge level category, this can certainly be improved so that more respondents are at a good level of knowledge about drought disaster mitigation.

Table 4. Post- test knowledge level

No	Characteristics	Frequency	%
1.	Not enough	0	00.0
2.	enough	5	10.9
3.	good	41	89.1
Total		46	100.0

The level of knowledge of post-test respondents increased in the good category to 41 (89.1%) respondents with an average score of 11.93.

Bivariate Analysis

Table 5. Normality Test Results

Knowledge	Shapiro-Wilk (p)	Information
Pre Test knowledge level	0.030	Not normally distributed
Post Test knowledge level	0.003	Not normally distributed

In the Shapiro-Wilk test, it is known that the probability value of the pre-test knowledge level is $p(0.030) < 0.05$, which means the data is not normally distributed, in the post-test probability data it is $p(0.003) < 0.05$ so the data is not normally distributed. From this data, the statistical test used is the Wilcoxon test

Table 6. Wilcoxon test results

Knowledge Level	N	Positive Ranks	Ties	Negative Ranks	Sig. (2-tailed)
Pre Test –Post Test	46	35	11	0	0.000

Based on the results of the Wilcoxon test with a significance level of $\alpha=0.05$, a value of $p\ 0.000<\alpha$ was obtained, which means that H_0 was rejected and H_a was accepted, and there were 35 respondents who experienced an increase (positive rating) in knowledge after being given health education on drought disaster mitigation and there were no respondents. which experienced a decline (negative rating).

DISCUSSION

In line with research conducted by Hutasoit M et al (2019) regarding the influence of health education on students' knowledge in dealing with disasters, the majority of research respondents were aged 11 years. Children aged 10-14 years are in early adolescence, where at this age thinking patterns are still influenced by situational (environmental) factors (Hidayat B, 2023).

Based on the gender frequency distribution, the number of male respondents was 31 (67.4%) greater than female respondents. In the class frequency distribution table, out of 46 most of the respondents were in class VI with a total of 29 (63%) students. According to research by Damayanti M and Sofyan O (2022) regarding the relationship between the level of education and the level of knowledge of society, there is a relationship between the level of education and the level of knowledge, if the level of education is higher, the higher the level of knowledge.

The level of knowledge of respondents before being given health education on

drought disaster mitigation was mostly in the good category at 29 (63.0%) respondents with an average score of 10.17. Even though the majority of respondents are in the good and sufficient knowledge level category, this can certainly be improved so that more respondents are at a good level of knowledge about drought disaster mitigation.

This statement is in accordance with the Indonesian community service journal, Rakuasa H and Mehdila M C (2023) regarding the implementation of disaster mitigation education, that the level of knowledge about disaster mitigation still needs to be increased with the aim of maximizing the increase in students' knowledge about disaster mitigation and creating disaster resilient schools.

The level of knowledge of post-test respondents increased in the good category to 41 (89.1%) respondents with an average score of 11.93. These results are in line with research by Pratiwi N H et al (2020) on increasing knowledge of disaster mitigation through disaster preparedness activities, where the results obtained after being given action experienced an increase in knowledge, in pre-action, 5 (38.46%) children achieved completeness and after participating in activities for 2 cycles increased to 11 (84.61%) children.

Education has a causal relationship with awareness and changes in behavior, where education can influence a person's awareness, if awareness about something has arisen in a person it will cause changes in behavior (Dewi D J K, 2022).

Based on the results of the Wilcoxon test with a significance level of $\alpha=0.05$, the result was $p\ 0.000<\alpha$, which means that H_0 was rejected and H_a was accepted, and there were 35 respondents who experienced an increase (positive ranks) in knowledge after being given health education on drought

disaster mitigation and there were no respondents. which experienced a decrease (negative ranks). So it can be concluded that there is an influence of health education on drought disaster mitigation on students.

According to Widiyastuti N E et al (2022), success in health education can be influenced by material factors such as the theory presented and the method of delivery, natural factors which can be the conditions and situation of the research location, instrument factors used, as well as individual factors in learning.

In line with research by Simandalahi T et al (2019) regarding the influence of health education on students' knowledge about disaster preparedness, a p value of 0.01 was obtained and there was an influence of health education on students' knowledge about disaster preparedness.

According to Fitriani F et al (2022), increased knowledge can occur because it includes the provision of information and a learning process, where individuals can explore what is hidden within themselves by encouraging them to think and develop their personality and free themselves from ignorance.

Increasing students' knowledge of drought disaster mitigation is very meaningful as an effort to mitigate disasters which will reduce the risk in the event of a drought disaster and grow a generation with broader knowledge of disasters in the future. This is in line with the results of research by Ariyani R and Endiyono E (2020) regarding the influence of disaster mitigation education on community preparedness, where one way to reduce loss of life and property is through disaster mitigation measures such as learning and education.

CONCLUSIONS

Based on the results of research that has been conducted, the level of students' knowledge about drought disaster mitigation before being given health education was 29 (63.0%) respondents in the good category with an average score of 10.17. After being given health education, the level of students' knowledge about drought disaster mitigation increased to 41 (89.1%) respondents in the good category, with an average score of 11.93. In the Wilcoxon test with a significance level of $\alpha=0.05$, the result was $p\ 0.000<\alpha$ and it can be concluded that there is an influence of health education on students' knowledge of drought disaster mitigation.

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CONFLICT MANAGEMENT STRATEGY IN AN EFFORT TO INCREASE NURSE JOB SATISFACTION AT MAWADDAH MEDIKA HOSPITAL, MOJOKERTO

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ABSTRACT	Keywords
Conflict is one part that often occurs in the nurse's work environment. One of the conflicts that often occurs is with clients and colleagues. Prolonged conflict can disrupt a person's physical and mental health and needs immediate treatment. The aim of this research is to determine the relationship between conflict management strategies and nurses' job satisfaction at Mawaddah Medika Hospital, Mojokerto. The research design uses Correlation. The research sample was executive nurses who worked in the inpatient ward of Mawaddah Medika Hospital, totaling 31 respondents. The sampling technique used is proportional random sampling. The research results showed that conflict management strategies used integration strategies (compromise, collaboration and accommodation) were 71%. Statistical tests showed that there was a relationship between conflict management strategies and nurses' job satisfaction with $p=0.02$ with a strong category of relationship. The relationship pattern is positive, meaning that the better the use of integrated management strategies (compromise, collaboration and accommodation), the higher the nurse's job satisfaction. Efforts to improve the ability to handle conflict can be done with conflict management training, conflict handling roleplay with small group discussions.	Job satisfaction, conflict management, nurses, strategy

INTRODUCTION

Hospital organizations are providers of health services with the main product being services to consumers. This will have an impact on the demand for good quality service for consumers so that it is necessary to improve services according to consumer

needs. Kinreja is one of the benchmarks for the success of health services that shows good accountability (Maharani & Vembriati, 2019) .

The organization's work performance must be well developed in order to provide quality services, which is

influenced by the quality of the components of health service providers, one of which is nursing services and also human resources as the main motor (Abdi & Rohmah, 2020) .

The condition of conflict management strategies is one of the main aspects that influences nurses' job satisfaction. Organizations must be able to build a positive work climate and provide comfort to their employees in working optimally.

Conflicts in hospitals often occur both between colleagues and their own profession or conflicts between nurses and clients. Prolonged conflict will have a major impact on employees' physical and mental health which can result in a decline in employee performance. Uncontrolled conflict will have a negative impact on the organization. The results of research by Shamoradi, et al in 2014) show that the negative impact of conflict can cause stress, mental damage, reduce job satisfaction, reduce productivity and cause problems in health services (Sukmawati & Susilo, 2023) .

The results of research conducted by Menik (2016) stated that the source of conflict in the provision of health services with patients is the existence of personal/health worker differences , unclear job descriptions and limited resources , resulting in increased workload and high levels of stress. resulting in less than optimal performance. research by Moisoglou, et al (2014) found that the profession of doctors had more frequent conflicts with their colleagues (74.3%) than nurses (40.4%) and nursing assistants, this happened because there was less communication with their colleagues than with nurse. Putri, Sriatmi, & Fatmasari (2018) in the Inpatient Room at Tugurejo Regional Hospital as many as 30

respondents (51.7%) while 28 respondents (48.3%) were satisfied.

Murray and Frenk (2010) conducted research on the performance of the health system in the United States compared to other countries in the world. Their results showed that although the United States has the highest per capita health spending, its performance ranked 37th in terms of population health outcomes. The study revealed significant gaps in the effectiveness of health services, showing that high spending does not always lead to better outcomes. Researchers emphasize the need for reform in the health system to increase efficiency and equity in health services.

Kruk et al. (2018) examined the quality of health systems in low- and middle-income countries. They found that low quality health services were the main factor causing preventable deaths in these countries. This research shows that even if access to health services improves, poor quality remains a significant barrier to achieving better health outcomes. Researchers recommend improving the quality of the health system through strengthening infrastructure, training medical personnel, and using appropriate health technology.

Research conducted by Rasanathan et al. (2011) highlighted the importance of primary health care in reducing health inequalities, especially in developing countries. This research finds that a strong primary health-focused approach, which includes equitable access and equitable distribution of health services, is effective in addressing the social determinants of health that lead to inequities. The results show that improving primary health systems can significantly improve population health by reducing disparities in access and health outcomes.

Diah Ayu Kusuma, et al 2018 with the title Exploring the challenges in providing health services in remote areas: A qualitative study of community health workers in Indonesia. This research examines the challenges faced by public health workers in providing health services in remote areas in Indonesia. The research results show that the main challenges faced include limited access to health facilities, lack of medical resources, and limited infrastructure. This research also found that health workers often work under high pressure with minimal support from the government. Researchers recommend increasing infrastructure support and training for health workers in remote areas to improve the quality of health services in these areas.

Managers have an important role in resolving organizational conflicts by creating a calm work environment so that it can provide comfort at work, innovation and increased productivity (Marquis & Huston, 2013). Based on the data, it was found that managers will spend 30 -40% of their working days dealing with various forms of conflict in hospitals (Haraway, 2005)

Efforts that hospitals can make to improve the ability of nurses or room heads in handling conflict are by providing training on how to deal with conflict, providing assistance and increasing emotional intelligence and supportive supervision which makes workers feel comfortable in their work environment and increases their efficiency, which in turn will increase job satisfaction (Bekru, Cherie, & Anjulo, 2017) . Nurse job satisfaction can increase with responsibility from managers, a satisfying work environment, rewarding nurses' performance, and creating a balanced work situation (Rismayadi et al., 2016) . Based on this background, researchers are interested in conducting research on conflict

management strategies that will have an impact on nurses' job satisfaction which can influence nurses' performance in providing services to consumers. Prolonged conflict will cause job satisfaction to decrease which can reduce work productivity.

RESEARCH METHODS

This research uses a correlation analytical design, namely a study that aims to determine the relationship between population characteristics or groups of individuals and the frequency of health problems. The approach used is a *cross-sectional study* , namely a study that aims to determine the relationship between certain factors and health problems that are discovered and collected at a certain time (Lapau & Barwin, 2017) . The cross-sectional research method is an observational research design used to assess the prevalence of a phenomenon or condition in a particular population at one point in time. In this method, data is collected from an entire population or representative sample at one time, without repeated data collection or long-term observations. This research can involve the entire population or a sample that reflects the main characteristics of the population. The main goal of cross-sectional research is to determine the prevalence or frequency of a particular phenomenon, condition, or variable when data is collected, such as the prevalence of smoking among adolescents. This research is observational, where the researcher only observes and records information without intervening or manipulating variables. In addition to measuring prevalence, cross-sectional research can also be used to analyze relationships between variables, such as the relationship between risk factors and health outcomes. The *independent* research variable is conflict management strategy and

the *dependent variable* is nurse performance .

RESULTS

Characteristics of Respondents Based on Age

Table 4.1 Frequency distribution based on respondent age at Mawaddah Mmedika Hospital, Mojokerto

NO	Age	Amount	Percentage (%)
1	Less than 29 years old	17	54.8
2	more than 29 years	14	45.2
Total		31	100

Table 4.1 shows that the majority of the 31 respondents aged less than 29 years, namely 17 respondents (54.8%).

Characteristics of respondents based on education

Table 4.2 Frequency distribution based on respondent education

NO	Education	Amount	Percentage (%)
1	S1	23	74.19
2	D3	8	25.81
Total		31	100.

, the majority had a Bachelor's degree, namely 23 respondents (74.19 %).

Characteristics of respondents based on gender

Table 4.3 Frequency distribution based on respondent gender

NO	Gender	Amount	Percentage (%)
1	Man	4	22.9
2	Woman	27	87.1
Total		31	100

Table 4.3 shows that of the 31 respondents, the majority were women, namely 27 respondents (87.1 %).

Characteristics of respondents based on length of service.

Table 4.4 Frequency distribution based on respondents' length of work

NO	Length of Employment	Amount	Percentage (%)
1	< 4.29 years	20	64.32
2	≥ 4.29 years	11	35.68
		31	100.0

Table 4.4 shows that of the 31 respondents, most of them had worked for a long time, < 4.29 years, namely 20 respondents (64.32 %).

Cross Tabulation Between Conflict Management Strategies and Job Satisfaction

Table 4.5 Cross Tabulation of conflict management strategies with Job Satisfaction at Mawaddah Medika Hospital in 2023

Conflict management strategy	Satisfaction					
	Total		Low		Total	
	f	%	f	%	f	%
Competition	1	3.2	0	0	1	3.2
compromise	8	25.6	4	12.9	12	38.7
collaboration	6	19.3	0	0	6	19.3
accommodation	0	0	2	6.5	2	6.5
dodge	8	25.6	2	6.5	10	32.3
	23	74.1	8	25.9	31	100

Table 4.5 shows that the majority (38.7%) of respondents who used the Compromise conflict management strategy had high job satisfaction .

The results of the Spearman Rho test show that $p\text{-value} = 0.001$ and the *coefficient correlation* is 0.565 so that H_1 is accepted, meaning that there is a relationship between conflict management strategies and nurses' job satisfaction with a close relationship in the medium category. The relationship has a positive pattern, where the use of integrated conflict management strategies (compromise, collaboration and accommodation) will be followed by higher job satisfaction for nurses at Mawaddah Medika Mojokerto.

DISCUSSION

The research results based on table 4.5 show that of the 31 respondents, almost half used the Compromise conflict management strategy, namely 12 respondents (38.3%). This means that the majority of nurses have the perception of using good strategies in dealing with conflicts that occur in their work environment.

The conflict handling strategy for nurses at Mawaddah Hospital, Mojokerto, uses a compromise strategy, which is a strategy for finding solutions to problems together by respecting other people. The choice of this strategy shows that the majority of nurses have a good understanding of dealing with conflict. Factors that influence conflict handling strategies include age and education. Based on the age of the respondents, most of them were young and had a bachelor's level education. This education is what dominantly influences the way strategies are taken, where nurse graduates have received material and training on conflict management strategies during the education process.

Meanwhile, nurses with D3 nursing education tend to use avoidance strategies. This strategy was chosen by the nurse because she was afraid of facing problems so she just tried to be safe. Even though this conflict is important for nurses and organizations to resolve it together with the best strategy. Low education and a lack of understanding of how to handle conflict also influence nurses in determining strategies. Conflict management strategies are grouped into two types, namely type 1) integration style (compromise, collaboration and accommodation) and type 2 consisting of dominance and avoidance styles.

This is in line with the results of research conducted by Doris in 2018 with the results that there was a relationship between good conflict management and nurses' job satisfaction with a significance value of 0.000.

Saka Aditya's 2018 research also shows the relationship between conflict management and job satisfaction. Conflict management has 5 conflict management styles, of these 5 factors, only 2 factors are formed, namely factors 1 and 2. Factor 1 includes collaboration style (integrating style), accommodation (obliging style), and compromise (compromising style). Factor 2 includes dominating style and avoiding style. In general, conflict management style has an influence on job satisfaction, with a significance value of 0.000

The results of Oktoviyani and Siti Anisah's research in 2022 at Taman Harapan Baru Hospital found that from 36 respondents it could be seen that well-implemented conflict management of the head of the room had an impact on the job satisfaction of implementing nurses by 100%, while poor implementation of conflict management of the head of the room had an impact on 46.7% of nurses were dissatisfied with their work and 53.3% of nurses were satisfied with their work. with p value = 0.001 or p value < α (0.05) meaning that there is an influence between conflict management and job satisfaction (Idealistiana & Salsabila, 2022) .

Based on the research results, it shows that the majority of the 31 respondents Nurse satisfaction was in the high category , namely 27 respondents (74.1 %) .

Job satisfaction of nurses at Mawaddah Medika Hospital in categories tall. This is influenced by many factors,

including: Age , Gender , Education , Years of Work , Marital Status. According to Robin (2002) and (Mangkunegara, 2009) . The age of nurses in the Mojokerto hospital inpatient room showed that most of the average age was 29 years or more , as many as 48 respondents (57 , 1 %). This is in accordance with (Mangkunegara, 2009) which states that a person's age has an influence on the level of job satisfaction. Older employees tend to be more satisfied than younger employees. It is assumed that older employees have experience adjusting to their work environment. Meanwhile, younger employees have more ideal expectations about their work, so if there is a gap between expectations and work reality, it causes nurses to feel dissatisfied .

The results of the research show that there is a relationship between conflict handling strategies and job satisfaction, the level of closeness of the relationship is moderate. This means that both variables have a positive pattern, the more appropriate the choice of conflict handling strategies (compromise, collaboration and accommodation), the nurse satisfaction will also increase.

Conflict management strategies play an important role in supporting work motivation to achieve job satisfaction which includes: communication, growth potential, individual wisdom, wages/salary, conducive working conditions. Apart from that, there are other factors that influence work satisfaction. Job security, interest in the workplace and work, work pressure, and interpersonal relationships at work are factors that have a big influence on job satisfaction (OECD, 2017) .

According to researchers, nurses who use compromise conflict management strategies will tend to have high job satisfaction. This happens because using this

strategy will help nurses solve problems and improve relationships between both parties so they can carry out their daily tasks well. When someone is able to deal with problems well, it will create a high sense of self-satisfaction at work and provide comfort.

Meanwhile, the use of avoidance strategies also has high satisfaction. This strategy was chosen by the nurse because it was not able to solve the problem well. Education is one of the factors that influences the implementation of conflict management. The majority of respondents' education is still D3 nursing . This will influence nurses' understanding of how to handle conflict in the organization. Nurses do not understand how to face and resolve problems either with patients, with collaborative teams or fellow colleagues. There is high satisfaction among nurses because they feel comfortable when working in a hospital that has a conducive work environment, good co-worker relationships, and support. Conflict handling strategies are very closely related to nurses' work, good skills in resolving conflicts will support better nurse performance so that nurses will feel satisfied with their work. Likewise, if the ability to handle conflict is less than optimal, then job satisfaction will also be sufficient because nurses feel uncomfortable working due to conflicts with colleagues or other health teams so nurses will tend to avoid that person. Prolonged conflict will psychologically disturb nurses and cause someone to feel depressed at work and ultimately leave the job.

The results of this research are in line with research by Oktoviyani and Siti Anisah in 2022 at Taman Harapan Baru Hospital, it was found that from 36 respondents it could be seen that well implemented head of room conflict management had an impact on the job satisfaction of implementing nurses by 100%, while the implementation of head of

room conflict management was good. Not being good has an impact on the job dissatisfaction of 46.7% of nurses and 53.3% of nurses are satisfied with their work. with p value = 0.001 or p value < a (0.05) meaning that there is an influence between conflict management and job satisfaction .

CONCLUSION

There is a relationship between conflict handling strategies and nurses' job satisfaction in conflict handling strategies. The close relationship in the category is strong and has a positive pattern. The better the use of integration style conflict management strategies (compromise, collaboration and accommodation), the more nurses' job satisfaction will increase.

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THE EFFECT OF BALANCED NUTRITION EDUCATION ON NUTRITION FULFILLMENT BEHAVIOR IN AN EFFORT TO PREVENT STUNTING IN PRECONCEPTION WOMEN

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ABSTRACT	Keywords
Nutrition during preconception is the main factor that affects the condition of women of childbearing age during pregnancy and the well-being of the baby. Nutritional status during preconception is one of the determinants of the quality of human life, especially for mothers and babies, with the fulfillment of balanced nutrition. In 2020, the risk of KEK in Indonesia was 9.7% in pregnant women (Ministry of Health, 2021). In 2022, the number of pregnant women experiencing KEK was 5.6%. In Probolinggo Regency in 2021, 12.7% of pregnant women had KEK. Providing nutritional education is one effort to convey nutritional knowledge to preconception women. This study aimed to analyze the Effect of Balanced Nutrition Education on Nutritional Fulfillment Behavior in efforts to prevent stunting in Preconception Women. The research design used was cross-sectional. The population in this study were all preconception women in Gading Village, Probolinggo, totaling 67 people. The sampling technique used was simple random sampling. The sample in this study was some women in Gading Village, Probolinggo, totaling 46 people. The analysis used is the Wilcoxon test statistical test using SPSS. The results of the study obtained the results of the analysis test using the Wilcoxon test showed a sig value of 0.000. Preconception nutritional preparation for prospective mothers is very necessary in preventing stunting.	Education, Balance Nutrition, Behavior, Stunting

INTRODUCTION

The preconception period is the period from three months to one year before conception and ideally should include the time when the ovum and sperm are mature,

which is about 100 days before conception. The nutritional status of WUS or premarital women during the three to six months of the preconception period will determine the condition of the baby born. Nutritional status

during the preconception period is one of the determinants of the quality of human life, especially for mothers and babies, with the fulfillment of balanced nutrition. This is closely related to the incidence of illness and death caused by Chronic Energy Deficiency and Iron Deficiency (anemia) in mothers during pregnancy, childbirth, and postpartum. The preconception period is the period before pregnancy.

Maintaining adequate nutrition before pregnancy is very important for preconception women because good nutrition will support the function of the reproductive organs optimally such as a smooth egg maturation process, production of good quality egg cells, and perfect fertilization process. For prospective mothers, adequate and balanced nutrition will affect overall health conditions during the conception and pregnancy period and will resolve the problem of malnutrition during the pregnancy period (Doloksaribu & Simatupang, 2019). Poor nutritional conditions during preconception or even during pregnancy can cause illnesses such as anemia and KEK (Chronic Energy Deficiency) and even death in mothers. According to the 2015 Census Figure Survey (Supas), "the maternal mortality rate in Indonesia is still high, which is around 305 per 100,000/KH (Live Birth)" (Kemenkes, 2019a).

According to WHO, the incidence of Chronic Energy Deficiency in pregnancy is in the range of 35-75%. In 2020, the risk of Chronic Energy Deficiency in Indonesia was 9.7% in pregnant women (Kemenkes, 2021). In 2022, the number of pregnant women experiencing Chronic Energy Deficiency was 5.6%. In Probolinggo Regency in 2021, there were 12.7% of pregnant women with Chronic Energy Deficiency.

Research conducted by Rahim et al showed a change in knowledge about nutrition and reproductive health after the

Prospective Bride Course was given to preconception women. Where before Suscatin only 70.4% of respondents had sufficient knowledge and 29.6% had insufficient knowledge. After Suscatin was conducted, there was an increase where all respondents had sufficient knowledge, namely 100% and none had insufficient knowledge. Saptawati revealed that knowledge about the importance of nutrition for prospective mothers can increase awareness of fulfilling nutrition before they become pregnant. This is in line with the results of Fauziyah's research in Tegal City which showed the influence of health education on preconception nutrition where there was an increase in knowledge and attitude scores before and after the intervention.

Based on a preliminary study of the average age of marriage and nutritional status through measuring the upper arm circumference (LILA) in premarital women who registered at the KUA Gading District, it was found that the average age of marriage of premarital women was 20 years, then the researcher measured the LILA and obtained data that out of 10 samples there were 4 (60%) premarital women who had a LILA measurement below 23.5 cm.

Preconceptional knowledge of women about nutrition is one of the indirect causes of malnutrition. However, increasing knowledge through nutrition education can prevent malnutrition and improve a person's behavior to consume food according to their nutritional needs. Good knowledge is one of the factors that influences a person's attitude (Rahmy et al., 2020). One of the efforts to convey nutritional knowledge to preconception women is by providing nutritional education. Health education or nutritional education is one of the behavioral modification processes that aims to influence or change community behavior that includes knowledge, attitudes, and

practices related to healthy living goals for individuals, groups, and communities and is part of a health program (Asnidar,2017). The importance of maintaining adequate nutrition for premarital women before pregnancy is because good nutrition will support the optimal function of reproductive organs such as smooth egg maturation, production of good quality egg cells, and a perfect fertilization process. Good nutrition can also play an important role in providing nutritional reserves for fetal growth and development. For prospective mothers, adequate and balanced nutrition will affect overall health conditions during conception and pregnancy and will be able to break the chain of malnutrition problems during pregnancy. (Susilowati & Kuspriyanto. 2016).

METHOD

The research design used was cross-sectional. The population in this study were all preconception women in Gading Village, Probolinggo, totaling 67 people. The sampling technique used was simple random sampling. The sample in this study was some women in Gading Village, Probolinggo, totaling 46 people. The researcher explained the purpose and procedures of the study and then distributed informed consent to be signed by preconception women. For preconception women who agreed to participate in the study, their data were taken by interview according to the items in the questionnaire. After completing the data collection, the researcher summarized and analyzed the research data. The data will be analyzed using SPSS with the Wilcoxon signed test analysis test.

RESULT

The analysis of research data using the Wilcoxon signed test. This test is used to compare observations before and after treatment. The results of testing behavior

before and after being given balanced nutrition education to fulfill nutrition can be presented in the form of a table.

Table 1. Frequency distribution of respondents based on age level

Age	F	%
26-35	29	63
36-45	15	32,6
46-55	2	4,4
Total	46	100

Based on the table above, data was obtained from all respondents aged 36-45 years, amounting to 29 people (63%).

Table 2. Frequency distribution of respondents based on education

Education	F	%
No school	10	21,7
Elementary School	3	6,5
Junior High School	15	32,6
Senior High School	17	37,0

Based on the table above, data was obtained that the majority of respondents' last education of mothers of stunted toddlers was high school/Islamic high school, with as many as 17 people (37.0%).

Table 3 Frequency distribution of respondents by occupation

Occupation	F	%
Housewife	27	59
Trade	6	13
Self-employed	12	26
Government employees	1	2

Based on the table above, data was obtained that the majority of respondents with the highest education level of mothers of stunted toddlers were housewives, amounting to 27 people (59.0%).

Table 4. The Influence of Balanced Nutrition Education on Nutritional Fulfillment Behavior in Efforts to Prevent Stunting in Preconceptional Women in Gading Village

Behavior	Balanced Nutrition Education			
	Before		After	
	F	%	F	%
Good	6	13,0	27	58,7
Enough	26	56,5	16	34,8
Less	14	30,5	3	6,5
Total	46	100	46	100
P Value =0,00	a = 0,05			

Based on table 4 below, shows that before being given education, most respondents had poor knowledge (30.5%), amounting to 14 respondents. After being given education, good knowledge increased to 58.7% (27 respondents) and sufficient knowledge for 16 respondents, amounting to 34.8%. Based on the results of the analysis test using the Wilcoxon test, it showed a sig value of 0.000.

DISCUSSION

Nutritional Fulfillment Behavior in Stunting Prevention Efforts Before Being Given Balanced Nutrition Education

Based on table 4 above, shows that before being given education, the respondents with a low level of behavior (56.5%) were 26 respondents. Prospective brides are part of the group of women of childbearing age who need to prepare their nutritional adequacy because optimal nutrition in prospective mothers will affect the growth and development of the fetus, the health condition of the baby born, and the safety during the birth process.

Preconception nutritional status is one of the factors that can affect the condition of pregnancy and the well-being of the baby. The health and nutritional status of pregnant women are determined long before, namely during adolescence and adulthood before pregnancy or during being a woman of childbearing age (Doloksaribu, 2019).

The nutritional status of the prospective mother during the three to six months of the preconception period will determine the condition of the baby born. So far, efforts to improve nutrition have been carried out when the mother is already pregnant, so it would be better if nutrition education, especially in preventing stunting, was carried out when the mother is not yet pregnant and is prepared for her pregnancy. Prospective mothers who suffer from anemia, malnutrition, or drastic weight loss during pregnancy will increase the risk of the prospective baby experiencing growth disorders. Comprehensive maternal nutritional interventions that begin during the preconception period or early pregnancy will result in greater length and weight of newborns and can reduce the incidence of stunting to a lower level compared to mothers who receive standard care (Fauziatin, 2019).

This improved growth pattern has an impact on infants during postnatal growth, even though there is no postnatal intervention for either the mother or the infant. In addition to pre-pregnancy nutrition, the growth period in the first 1000 days of life is also important in preventing stunting. Therefore, multi-micronutrient supplement intervention as a stunting prevention program targeting prospective brides and pregnant women is very important (Krebs, et al 2021).

Nutritional Fulfillment Behavior in Efforts to Prevent Stunting After Being Given Balanced Nutrition Education

Based on table 4 above, it shows that after being given education, good knowledge increased to 58.7% of 27 respondents. Providing nutritional interventions is not enough to prevent stunting because it must be followed by changes in community behavior that can be done through interventions in the form of education. Information in health education can change mindsets for the better so that there is a change in attitude (Lewa, 2021).

This is by the theory put forward by Azwar that personal experience, culture, other people, mass media, institutions or religious institutions, and individual emotional factors are factors that can influence the formation of attitudes. Rusmiati and Hastono stated that the formation of attitudes begins with knowledge that is perceived as positive or negative, then internalized in a person. In addition, the increase in positive or good attitudes is due to information when providing health education, which suggests that fulfilling nutrition to prevent stunting is important. Efforts to increase knowledge can be made by providing nutrition education or counseling so that it can encourage someone to change their attitudes and behavior. Maternal education can be a predictor and can be modified to increase growth and reduce the incidence of stunting (Unicef, 2017).

Other studies show that there is a change in knowledge and attitudes of prospective brides and grooms after being given nutrition education, where on average respondents have started to

improve their diet to prepare for pregnancy from the nutrition education that has been given previously. Health education aims to increase knowledge so that they can change behavior towards a healthier life.

The Influence of Balanced Nutrition Education on Nutritional Fulfillment Behavior in Efforts to Prevent Stunting in Preconception Women

Based on the results of the analysis test using the Wilcoxon test, the sig value is 0.000.

Preconception health is part of the overall health of women and men during their reproductive period. Preconception health care is useful for reducing risks and promoting a healthy lifestyle to prepare for a healthy pregnancy.

Comprehensive preconception health includes reproductive life planning related to postponing pregnancy, obstetric history, nutrition, vaccination, sexual health, chronic medical conditions, current medications, psychosocial health, and contraception. Pregnancy that is not well prepared is at risk of pregnancy problems that will affect the baby that will be born later. Conversely, a well-planned pregnancy will have a positive impact on the condition of the prospective mother and fetus (Yulivantina, 2021)

Research by Patata et, al (2021) shows that there is a change in the knowledge and attitudes of prospective brides and grooms after being given nutritional education, where on average respondents have started to improve their diet to prepare for pregnancy from the nutritional education that has been given previously. Health education aims to increase knowledge so that it can

change behavior towards a healthier life. Prospective brides and grooms with good knowledge will influence their attitudes and behavior in preventing stunting (Rusman, 2020). This is also supported by the research results of Sumarmi, et al. showing that multi-micronutrient supplements given since preconception can reduce the incidence of stunting compared to iron folate supplements given only during pregnancy. Provision of multi-micronutrients since preconception can prevent stunting since the baby is born.

CONCLUSION

Preconception nutritional preparation for prospective mothers is very necessary in preventing stunting. Balanced nutritional education in the future should be started since adolescence, not only focusing on pregnancy, after the baby is born, toddlers, and young children. Interventions for prospective mothers can also be done by providing education about nutrition, reproductive health, and about 1000 HPK to increase the knowledge of prospective mothers in preventing stunting.

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COMPARISON OF THE SENSITIVITY AND SPECIFICITY OF THE ZIEHL NEELSEN METHOD WITH THE MOLECULAR RAPID TEST METHOD IN THE EXAMINATION OF BTA IN THE SPUTUM OF PATIENTS SUSPECTED OF PULMONARY TUBERCULOSIS

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ABSTRACT	Keywords
<p>Pulmonary tuberculosis or pulmonary TB is a disease that is easily transmitted through the air from the source of transmission, namely BTA positive TB patients when coughing or sneezing, patients spread germs into the air in the form of sputum splashes. To study the comparison of the sensitivity and specificity of the Ziehl-neelsen method and the Molecular Rapid Test method in examining BTA in the sputum of TB suspected patients. This study is an analytic observational study with a cross sectional design. The population in this study were all patients suspected of having Pulmonary TB who came to the Kupang Health Center. Sample selection used simple random sampling method with a sample size of 60 patients. The hypothesis was proven using the Kappa test. The sensitivity and specificity of the Ziehl-Neelsen method BTA examination were 60% and 100%, while the sensitivity and specificity of the Molecular Rapid Test method examination were 100% and 100%. Cohen's Kappa test showed that between the Ziehl-Neelsen and Molecular Rapid Test methods both had high sensitivity and specificity (Kappa; 0.733). Based on the results of the study, the molecular rapid test method has a higher sensitivity than the Ziehl-Neelsen method. This method can be recommended for early detection of pulmonary TB.</p>	<p>Pulmonary TB, Ziehl-Neelsen method, TCM method.</p>

INTRODUCTION

Tuberculosis (TB) is an infectious and contagious disease caused by Mycobacterium tuberculosis (MTB). TB is a disease that is easily transmitted through the air from the source of transmission, namely

BTA positive TB patients when coughing or sneezing, patients spread germs into the air in the form of sputum splashes. One cough can produce about 3000 sputum splashes. Supporting examinations for TB disease can be carried out by examining molecular rapid

tests, ziehl-neelsen BTA method examinations, thoracic photographs, tuberculin tests (mantoux) and MTB culture examinations. MGIT is a method for culture or growth of MTB. Lack of culture due to the nature of MTB slow at the time of division of about 20 hours, so the new growth dikultur appear after 4 - 8 weeks. (Nurul Husna, 2020).

The Molecular Rapid Test is a cartridge test based on the Nucleic Acid Amplification Test (NAAT) that automatically detects TB cases and rifampicin resistance, and can be performed even if the sputum sample is only 1 ml. The World Health Organization (WHO) recommends the use of TCM to evaluate TB suspect patients. TCM is considered to provide advantages for early diagnosis of TB and the use of this diagnostic system can increase the certainty of rapid diagnosis for all patients (Zuraida et al, 2021).

BTA examination Ziel-Neelsen method is used for bacterial identification (morphology / shape) requires a stain that uses predetermined dyes. Dyes that are widely used include carbolic fuchsin, acid alcohol and methylen blue, so that bakteri can be stained, previously a preparation must be made on a glass object (smear), where the smear is later dried at room temperature and the bacteria are fixed by heating over a flame. Early diagnosis of TB and detection of TB drug resistance improves survival because identifying it sooner will treat it at an earlier stage and reduce mortality (Kemenkes RI, 2012).

The Rapid Molecular Test (TCM) is an automated and integrated molecular test with Polymerase Chain Reaction (PCR) technique based on bacterial Deoxyribonucleic acid (DNA) testing to detect MTB and simultaneously detect the bacteria's resistance to rifampicin. TCM has a sensitivity of 96.5% in diagnosing Multi Drug Resistance Tuberculosis (MDR-TB)

and a sensitivity of 96.1%. In detecting rifampicin resistance (Kurniawan E et al, 2016). The results of diagnostic tests using rapid molecular techniques to diagnose smear-negative pulmonary TB showed a sensitivity of 95.46%, a negative predictive value of 87.5%. TCM has high sensitivity, specificity, positive predictive value, negative value and accuracy in smear-negative pulmonary TB.

To diagnose a disease must have a good level of accuracy, so the validity of an examination method is needed to determine individuals who are sick and who are not sick (Komariah et al., 2022). The validity of an examination method can be done by assessing and specificity of the method (Siregar et al., 2018). Puskesmas Kupang Mojoketo district has a TB testing facility service with ZN and TCM methods. The examination used has good validity, so it is necessary to know the sensitivity and specificity values of the examination. This study will also test to determine the BTA examination of the Ziehl Neelsen method and the Molecular Rapid Test.

METHOD

This type of research is a quantitative analytical study that explains the sensitivity and specificity between examination variables with ziehl-neelsen staining and TCM examination in suspected pulmonary TB using a cross sectional approach. The sample was 60 sputum, samples were taken using total sampling technique. Independent variables in this study are using the Ziehl-Neelsen method and the TCM method. The dependent variable in the study: sputum culture BTA diagnosis of TB enforcement (gold standard). This study was conducted in the work area of UPTD Puskesmas Kupang, Puskesmas Jetis, Puskesmas Gedeg. This study was conducted in September 2023. To determine the difference in sensitivity and

specificity of the Ziehl-Neelsen method with the TCM method, a statistical test was conducted with the Cohen's Kappa coefficient test. This test was conducted to determine the consistency between the two examination methods, namely the Ziehl-Neelsen method and the TCM method. Sputum sampling is carried out by collecting 2 specimens of sputum or phlegm from patients with suspected TB with a sputum collection interval of 8 to 24 hours or to make it easier by using the Anytime (SS) or Morning-Time (SP) system.

RESULTS

Table 1. Characteristics of respondents comparing the accuracy of BTA results of the Ziehl-neelsen method BTA strategy and the TCM method at the Puskesmas against the gold standard of using BTA culture.

No.	Characteristics	n	%
1	Gender		
	Male	28	46.7
	Female	32	53.3
2	Age		
	Young age	1	1.7
	Productive age	49	81.7
	Non-productive age	10	16.6
3	Jobs		
	Not working	1	1.7
	Housewife	25	41.7
	Farmer	11	18.3
	Private	17	28.3
	Retired	6	10.0
4	Education		
	Not yet in school	1	1.7
	Primary Education	34	56.7
	Secondary	23	38.3
	Education	2	3.3
	Higher Education		
	Total	60	100

Based on Table 1. that of the 41 research respondents, the most female respondents were 32 people (53.3%) with a productive age range, almost all of them were 49 people (81.7%), the most private jobs were 17 people (28.3%) and most of the last

education was elementary as many as 34 (56.1%).

Table 2. Frequency Distribution of comparison of the accuracy of BTA results of the Ziehl-neelsen method and the TCM method at the Puskesmas against the gold standard of using BTA culture

No.	Methods	F	%
Ziehl-neelsen			
1	positive	3	5
2	negative	57	95
TCM			
1	positive	5	8.33%
2	negative	57	91.67%
Total		60	100

Table 2 shows that out of 60 research respondents underwent 2 BTA examinations, namely the Ziehl-neelsen and TCM methods. Based on this table, it can be seen that the results of the examination with the TCM method show that there are 5 people (8.33%) who tested positive.

Table 3. Distribution of sensitivity and specificity analysis of BTA Ziehl-Neelsen Method

BTA Metode Ziehl-Neelsen	Culture (Gold Standart)		Total
	Positive	Negative	
Positive	3 (a) True Positive	0 (b) False Positive	3
Negative	2 (c) False Negative	55 (d) True Negative	57
Total	5	55	60

Based on Table 3, out of 60 research respondents who were examined for BTA Ziehl-Neelsen Method and compared positively with positive culture results as many as 3 people and BTA Ziehl-Neelsen Method negative and compared with negative culture results as many as 55 people. 2 people got false negatives. The sensitivity result is 60% and the specificity

is 100%. It can be seen that the sensitivity of BTA Ziehl-Neelsen Method is 60 and the specificity is 100%.

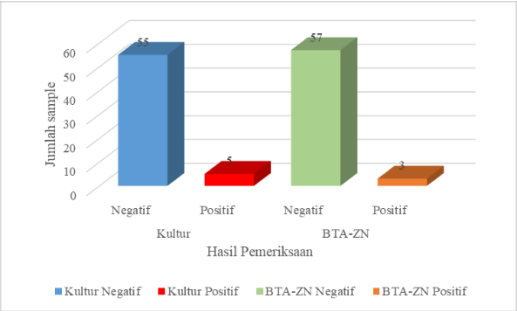


Figure 1. Comparison of the BTA Ziehl-Neelsen method and Culture Method.

Table 4. Distribution of sensitivity and specificity analysis TCM Method

TCM Methods	Culture (Gold Standart)		Total
	Positif	Negatif	
Postive	5 (a) True Positive	0 (b) False Positive	5
Negative	0 (c) False Negative	55 (d) True Negative	55
Total	5	55	60

Based on Table 4. It can be seen that out of 30 research respondents who were examined by TCM and compared with positive culture results as many as 5 people and negative TCM and compared with negative culture results as many as 55 people. The sensitivity result is 100% and the specificity is 100%.

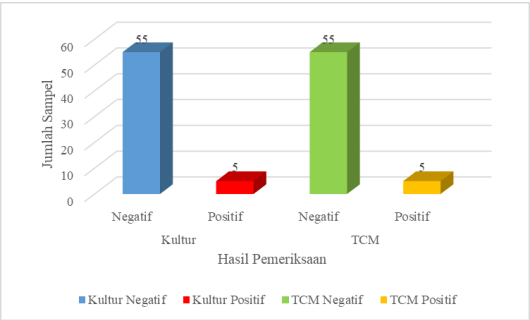


Figure 2. Comparison of TCM method and Kulure method

Table 5. Cross tabulation of the comparison of the accuracy of BTA results of the Ziehl-Neelsen method and the TCM method at the Puskesmas against the gold standard using BTA culture

Variable	Type of Lab Test		Total
	Positive	Negative	
Type of Lab Test	F	F	F
Ziehl-Neelsen	3	57	60
TCM	5	55	60
Total	8	112	120

P value Kappa = 0.733

Based on Table 5. it can be seen that out of 60 research respondents who were examined by TCM and compared positively with positive culture results as many as 3 people (5%) and those who were tested positive TCM and compared with positive culture results as many as 5 people. The Kappa test results between the Ziehl-Neelsen method compared to TCM were 0.733 (p value>0.05), meaning that the Ziehl-Neelsen method and the TCM method are equally sensitive compared to the gold standard.

DISCUSSION

1. Sensitivity and specificity of Ziehl-Neelsen Method BTA to Culture Method BTA.

The results of research conducted with the Ziehl-Neelsen Method BTA examination showed positive results compared to positive culture results as many as 3 people (true positive) and negative Ziehl-Neelsen Method BTA compared to negative culture results as many as 55 people and 2 false negatives. The sensitivity result of BTA Ziehl-Neelsen Method is 60% and the specificity is 100%.

The Ziehl-Neelsen (ZN) method and culture are the two main

techniques used to detect *Mycobacterium tuberculosis*, the cause of tuberculosis (TB). Both have different advantages and disadvantages in terms of sensitivity, specificity and time. The Ziehl-Neelsen method is a staining technique used to detect acid-resistant bacilli (BTA) in sputum specimens. This method is simple and quick, with a positive result if there are more than 10,000 germs/ml of sputum. However, the sensitivity of this method is not always high, especially if the number of bacteria in the sputum is low. Research shows that the ZN method has a sensitivity that is not as high as its specificity, and positive results can be affected by the presence of non-tuberculosis bacteria (Evita et.al, 2019).

In clinical practice at puskesmas Gedek in Mojokerto district, the choice between the Ziehl-Neelsen method and culture depends on the clinical context and available resources. The Ziehl-Neelsen method can be used for rapid diagnosis, while culture remains a more reliable method for confirmation and determination of drug sensitivity. According to researchers, a combination of these two methods is often necessary to obtain an accurate and effective diagnosis in the management of tuberculosis. The results of research by nikmatul et.al, , 2020, Sensitivity and Specificity This Ziehl-Neelsen method has a lower sensitivity, with results showing a sensitivity of about 27% and specificity of 98% in some studies. This means that although positive results are very accurate, many TB cases can be missed (false negative results) if the number of bacteria in the sputum is low. The results of this study also obtained 2 false negatives, this is because the amount of sputum obtained from the

patient was insufficient. Advantages of the Ziehl-Neelsen method Result Time: Results can be obtained quickly, usually within a few hours after sampling. Cost and Resources: This method is relatively inexpensive and does not require complex laboratory equipment, so it can be performed in many health facilities (Ariestoles et.al, 2024).

Researcher's opinion that the Ziehl-Neelsen method is suitable for rapid diagnosis, but has limitations in sensitivity, while the culture method is the gold standard in TB diagnosis, providing more accurate results despite requiring higher time and cost. A combination of these two methods is often required for comprehensive and accurate diagnosis in the management of tuberculosis

2. Sensitivity and specificity of BTA TCM method against BTA culture method

The results of the study carried out TCM examination and compared positively with positive culture results as many as 5 people (true positive) and TCM negative and compared with negative culture results as many as 55 people (true negative). In the TCM method, there were no false positives and false negatives. The sensitivity result is 100% and the specificity is 100%.

The TCM (Molecular Rapid Test) and culture methods are two techniques used to diagnose tuberculosis (TB) infection caused by *Mycobacterium tuberculosis*. Both have their own characteristics and advantages. TCM is a newer diagnostic method and has several advantages over traditional methods. The advantages of the TCM method, on

sensitivity TCM has a sensitivity that varies between 73% to 93%, depending on the study conducted. The average sensitivity is around 83%. Speed of Results: One of the main advantages of TCM is the faster time in providing results, which can be obtained in a matter of hours, compared to culture which takes longer, Resistance Detection: TCM not only detects the presence of TB bacteria, but can also identify resistance to rifampicin, one of the main drugs for TB, which is crucial in the management of therapy: The method can be used for all patients, both from the public and private sectors, and has been regulated in the national TB control program (Kurniawan, 2020).

Culture, especially using Lowenstein-Jensen (LJ) media, is the gold standard method in the diagnosis of TB. Gold Standard: Culture is considered the gold standard method for TB diagnosis. Although slower, culture provides highly accurate results in detecting *Mycobacterium tuberculosis*, Sensitivity and Specificity: The sensitivity of culture varies, but averages around 71% to 100% depending on the conditions and method used. Specificity is also high, reaching 90%, However, culture results can be affected by factors such as contamination and growth conditions. Process Time: The culture process takes a longer time, often up to several weeks, to obtain reliable results.

Although TCM showed higher sensitivity and better speed of results, there was no significant difference between the detection results of TCM and culture in some studies. The results of Ariestoles, 2024 showed a significance value (p) of 0.920, indicating that both methods have

comparable performance in detecting TB infection Overall, both TCM and culture have important roles in TB diagnosis, and the choice of method can be adjusted according to clinical needs and the situation. TCM showed higher sensitivity in detecting TB infection. The average sensitivity of TCM ranges from 73% to 93%, while LJ culture has an average sensitivity of around 71%. The specificity of TCM is also quite good, with some studies showing rates above 80%.

LJ cultures have high specificity, but their sensitivity can be affected by factors such as contamination and growth conditions Response Time: TCM provides results in a much faster time, often within hours, compared to culture which can take up to several weeks to get accurate results. This allows for faster treatment of patients infected with TB, according to the researchers. A very important advantage is that TCM can detect resistance to rifampicin, one of the main drugs for TB, immediately. This is very important in the management of TB therapy, especially in an era of increasing drug resistance.

3. Comparison of sensitivity and specificity between TCM method and Ziehl Neelsen method in diagnosing tuberculosis

The results of the study conducted a positive TCM examination with positive culture results as many as 3 people (5%) and those conducted a positive TCM examination and positive culture results as many as 5 people. The result of the difference test between the BTA method compared to TCM is 0.717 (p value>0.05), meaning that the BTA lab test with the ZN method and the TCM Lab test are no difference,

meaning that they are equally sensitive compared to the gold standard. The TCM method (GeneXpert) and the Ziehl Neelsen (ZN) method are two techniques used to detect *Mycobacterium tuberculosis* infection, the cause of tuberculosis. The comparison between the two methods is based on the effectiveness, sensitivity, and advantages and disadvantages of each.

If we compare the advantages of the Ziehl-Neelsen method include: (1) Speed: Results can be obtained in a short time. (2) Cost: Relatively cheap and does not require expensive equipment, (3) Simple: Easy procedure performed by trained medical personnel. The disadvantages are: (1) Low sensitivity: Especially in specimens with small numbers of bacteria. (2) Difficulty in interpretation: Positive results may be caused by other bacteria that are not pathogenic, (3) The results are often negative even if the patient is infected, with a positive detection rate of about 12.5%, (4) It takes longer to obtain results, and cannot detect resistance to drugs such as rifampicin.

TCM method: has higher sensitivity, with some studies showing positive results of up to 33% compared to 26% for Ziehl Neelsen can detect resistance to rifampicin simultaneously with bacterial identification, simultaneously with bacterial identification, TCM Disadvantages: Higher cost compared to the Ziehl Neelsen method, Requires specialized equipment and training to operate the GeneXpert device. Research shows that the TCM method has better sensitivity in detecting *Mycobacterium tuberculosis*. There are fewer true negative results with the TCM method

compared to Ziehl Neelsen, indicating that TCM is more effective in detecting infection.

It is the researchers' opinion that the TCM method (GeneXpert) is superior in terms of sensitivity and ability to detect drug resistance compared to the Ziehl Neelsen method. However, the cost and availability of tools are important factors in the selection of methods to be used in various health facilities. There were fewer true negative results with the TCM method compared to Ziehl Neelsen, suggesting that TCM is more effective in detecting infection, TCM also has higher specificity in detecting TB bacteria. BTA microscopic examination with Ziehl-Neelsen staining has a lower positive value compared to TCM. TCM can provide results in approximately 2 hours, which is faster than Ziehl-Neelsen staining which takes longer to provide results. TCM can give results in approximately 2 hours, which is faster than Ziehl-Neelsen staining which takes longer to give results, TCM can be used on a variety of specimens, such as sputum, gastric lavage, stool, etc., which allows TB testing in patients who cannot sputum directly. Thus, TCM offers several significant advantages in TB testing compared to Ziehl-Neelsen staining (Nikmatul, 2020).

The results of Karuniawan's research, 2020, three kinds of BTA staining methods, namely Tan Thiam Hok, Ziehl Neelsen, and Fluorochrome, were compared to the results of sputum culture on Lowenstein Jensen solid medium as a gold standard. Interpretation of staining results refers to the IUTLD scale. *Mycobacterium tuberculosis* growth was found in 27 out of 98 sputum specimens (27.6%) from

98 tuberculosis suspects. The sensitivity of Tan Thiam Hok, Ziehl Neelsen, and Fluorochrome staining methods were 62.9%, 81.5%, and 92.6%, while the specificity was 92.9%, 91.6%, and 91.1%, respectively. The positive predictive values were 77.3%, 78.6%, and 71.4%, respectively, while the negative predictive values were 86.8%, 92.9%, and 96.8%. From this study, it was found that TCM is the best method and can be done in a simple laboratory (Karuniawan, 2020). In contrast to this study which also differentiates with the TCM method. And the results are more effective TCM than the three methods above.

CONCLUSIONS

The sensitivity result of the Ziehl-Neelsen method was 60% and the specificity was 100%. The sensitivity result of TCM method is 100% and the specificity is 100%. The results of the Cohen's Kappa coefficient test between the Ziehl-Neelsen method compared to the TCM method were 0.733, meaning that the BTA microscopic test with the Ziehl-Neelsen method and the TCM method both have high sensitivity and specificity.

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THE INFLUENCE OF SOCIAL AND CULTURAL NORMS ON THE UTILIZATION OF PUBLIC HEALTH SERVICES AT THE KALAR HEALTH CENTER – SOUTH ARU

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ABSTRACT	Keywords
<p>The utilization of puskesmas health services by the community is still considered less than optimal. Susenas 2021 data shows that the achievement of utilization of Puskesmas services, especially outpatient services in Indonesia in 2019, only reached 50.5% of people who had health complaints. To know the effect of social and cultural norms on the utilization of public health services at the Kalar - Kalar Health Center, South Aru District, Aru Islands Regency.</p> <p>Analytic research type with cross-sectional. Population is 2089 family in Puskesmas Kalar - Kalar. Simple random sampling technique as many as 225 respondents. Independent Variables Social and Cultural Norms. Dependent Variable Health Service Utilization. Interview using a questionnaire sheet Analysis used Chi square.</p> <p>There was significant effect between social norms on the utilization of health services where the condition that there was an effect of p value $0.02 < 0.05$, there was a significant influence of culture on the utilization of health services between p value $0.00 < 0.05$. multivariate test p value $0.031 < 0.05$.</p> <p>The results of the bivariate test of social and cultural norms variables with utilization of health services were significant, but at the time of multivariate only social norms variables were significant.</p>	<p>Social Norms, Culture, Service Utilization</p>

INTRODUCTION

Puskesmas as the first and foremost health service unit in the health service system is obliged to carry out health efforts for the realization of health development in its work area. However, the use of health

services by the community is still considered to be less than optimal. Susenas 2021 data shows that the achievement of utilizing Puskesmas services, especially outpatient services in Indonesia, in 2019 only reached 50.5% of people who have health

complaints. This achievement decreased to 46% in 2020 and 40.4% in 2021. The low utilization rate of health services shows that public awareness of health is still lacking and the provision of health facilities is not even healthy (Ministry of Health of the Republic of Indonesia, 2021).

The comparison of the utilization of health services by people in rural areas also has a lower percentage, namely 36.2%, when compared to the utilization of health services in urban areas which reaches 43.8%. The low rate of utilization of health services shows that public awareness of health is still lacking (Ministry of Health of the Republic of Indonesia, 2021). Based on data on the number of patient visits per Puskesmas, which from year to year has decreased the number of visits compared to the Kalar-Kalar Health Center, South Aru District, Aru Islands Regency, which from year to year has increased the number of visits. Based on data from the Kalar-Kalar Health Center, South Aru District, Aru Islands Regency in 2019 there were 6,456 visits, in 2020 there was an increase of 7,445 visits, and in 2021 there was another increase in the number of visits of 7,701 visits.

Some factors cause low visits: (1) public perception of health, education and income affects health center visits, (2) knowledge and attitudes, low community knowledge can be an obstacle to visits to health centers preferring traditional medicine and cultural beliefs, negative attitudes. (3) Economy. People with low economic conditions have difficulty using services, jobs and accessibility affecting health center visits. (Fatimah, S., 2019).

The role of socio-culture is able to determine the quality of public health. If a community is too rigid in the local socio-culture, it can also affect health behaviors in the community (Rapanna, P., 2020). Traditional medicine culture has become

part of the socio-culture of the community so that it is quite well known by the community and easy to obtain, forming a belief that traditional medicine culture can also solve various health problems (Anggreni et al, 2023). Hypertensive patients are more confident in traditional medicine due to family experience and cheap treatment costs (Ervina & Ayubi, 2018). Public trust in traditional medicine is more based on the healing effects that have been felt both from personal experiences and the experiences of others (Marwati & Amidi, 2019).

Increasing health center visits through social and cultural norms can be achieved through a collaborative approach between local governments, community leaders and health workers. These efforts: (1) education and promotion, (2) socialization through traditional events, (3) Local Cooperation, (4) Utilization of Traditional Media. With this approach, it is hoped that visits to the health center can increase through respect for indigenous culture and strengthening cooperation between the health center and the local community. (Mamahit et al., 2022).

This is the background for research at the Kalar-Kalar Community Health Center, South Aru District, Aru Islands Regency, which still has strong culture or traditions, one of which is that people are often seen carrying out traditional medicine, going to shamans who are thought to be able to help provide healing and healing. others compared to those who utilize available health services. For this reason, it is necessary to carry out an analysis regarding the use of community health center services in terms of knowledge, perceptions, attitudes, actions, facilities and social culture.

METHOD

This type of research is observational analytical. Analytical research

is a research that aims to find the influence between one variable and another (Notoatmodjo., H., 2018). The design used is cross-sectional, This research was conducted at the Kalar - Kalar Health Center in November 2023 – May 2024. The population in this study is 2898 families in the working area of the Kalar - Kalar Health Center. After being calculated using the sampling formula, the number of research samples was obtained as many as 225 people. The data collected in this research is primary data and secondary data. Primary data collection regarding social norms, culture and use of health services was carried out by survey by giving questionnaires to respondents, questionnaires using a Likert scale, the method used was the checklist method. The independent variables of this study are social and cultural norms. The dependent variable of this study is the utilization of health services. The research instrument used a questionnaire. Bivariate analysis uses the Chi Square test. Multivariate analysis uses logistic regression tests.

RESULTS

Table 1. Distribution of frequency of respondents' characteristics of the influence of social, cultural norms and the use of health services in the Kalar-kalar Health Center, South Aru district

No	Variable	f	%
1	Gender		
	Man	113	50.2
	Woman	112	49.8
2	Age		
	17-25 (late teens)	64	28.4
	26-36 (Early adult)	81	36.0
	36-45 (Late adult)	46	20.4
	45-59 (elderly)	26	11.6
	60 years old (elderly)	8	3.6
3	Education		

	SD/MI	79	35.1
	SMP	39	17.3
	SMA	41	18.2
	D3/undergraduate	66	29.3
4	Number of Family Members		
	>3 people	124	55.1
	< 3 people	110	44.9
5	Work		
	Farmer	105	46.7
	Laborer	69	30.7
	Private	19	8.4
	ASN	32	14.2
6	Social norms		
	Positive	123	54.7
	Negative	102	45.3
7	Culture		
	Positive	162	72
	Negative	63	28
8	Service Utilization		
	Utilize	164	72.9
	Not taking advantage of	61	27.1
	Total	225	100

Based on table 1 above, the frequency distribution of gender is known to be almost half of the males as many as 113 people (50.2%), the age factor is mostly in the category of early village period (26-35 years) as many as 81 people (36.0%), while in the variable of Education Most of the categories of Elementary / MI Education are 79 people (35.1%), in the number of families Most of them are in the category of > 3 people, namely 124 people (55.1%), Most of the respondents worked as farmers as many as 124 people (55.1%).

Table 2. Distribution of Frequency of Influence of Social, Cultural Norms and Utilization of Health Services in Kalar-kalar Health Center, South Aru District

No	Variable	f	%
1	Social norms		
	Positive	123	54.7
	Negative	102	45.3
2	Culture		
	Positive	162	72
	Negative	63	28
3	Service Utilization		
	Utilize	164	72.9
	Underutilization	61	27.1
	Total	225	100

Based on Table 2. Above, the frequency distribution of social norms is known to be almost half of the men as many as 123 people (54.7%), the cultural variables are mostly with the category of having a positive culture as many as 162 people (72%), while in the variable of the utilization of most categories using health services, namely as many as 164 people (72.9%)

Table 3. The Influence of Social Norms on the Utilization of Health Services at the Kalar-Kalar Health Center, South Aru District

Social norm	Utilization of health services				Total	
	Utilize		No taking			
	f	%	f	%	f	%
Postive	88	39.1	3	15.6	12	54.7
Negativ e	76	33.6	2	11.6	10	45.3
Total	164	72.9	61	27.1	225	100

Based on Table 3 above, the results of cross-tabulation of social norms with the use of health services, out of 225 respondents who have positive social norms and utilize health services, 88 people (39.1%), while those

who have negative social norms and do not use health services are 26 people (11.6%) in the tabulation using the chi square test shows that there is a significant relationship between social norms and the utilization of health services where the condition that there is an influence, a significance value of 0.02, ($p < 0.05$) means that there is an influence between social norms and the use of services, so the research is the level of correlation strength or influence is sufficient or strong enough.

Table 4. Cultural Influence with the Utilization of Health Services at the Kalar-Kalar Health Center, South Aru District

Culture	Utilization of health services				Total	
	Utilize		No taking			
	f	%	f	%	f	%
Postive	11	52.	4	19.	16	54.
	9	9	3	1	2	7
Negativ e	45	20.	1	8.0	63	45.
		0	8			3
Total	16	72.	6	27.	22	
	4	9	1	1	5	100

Based on Table 4. above, the results of cross-cultural tabulation with the use of health services, of 225 respondents who have a positive culture and utilize health services as many as 119 people (52.9%), while those who have a negative culture and do not utilize health services are 18 people (8%) in the tabulation using the chi square test shows that there is a significant relationship between culture and the use of health services that there is an influence, A significance value of 0.00, ($P < 0.05$) means that there is an influence between culture and service utilization, so the research is the level of correlation strength/influence is sufficient or strong enough.

Table 5. The results of the Chi square test on the influence of social and cultural norms with the use of health services at the Kalar-Kalar health center, South Aru District

Variable	Coefficient B	Significant	95% CI	
			Upper	Lower
Constant	23.297	0.997		
Social norms	2.2915	0.031*	1.226	79.774
Culture	21.0957	0.997		

Based on Table 5 above, of the 2 independent variables tested, together social and cultural norms on the utilization of health services resulted in a significant variable (influencing) on social norms of 0.03 (<0.05), while on insignificant cultural variables of 0.997 ($p>0.05$). The multivariate analysis in the Chi square test proved the strongest influence on the dependent variable, namely the influence of social norms on the use of health services at the Kalar-Kalar Health Center, South Aru District.

The results of the independent variable test are explained as follows:

1. The influence of social norms on the utilization of health services

It is known that the Sig value for the influence of social norms on the utilization of health services is $0.02 < 0.05$ and the t-value is $9.889 > t_{table} 1.997$ so it can be concluded that H1 is accepted, which means that there is an influence of social norms on the use of health services

2. Cultural Influence on Health Service Utilization

It is known that the Sig value for cultural influence on the utilization of health services is $0.997 > 0.05$ and the t-value is $1.450 > t_{table} 1.997$ so it can

be concluded that H1 is not accepted which means that there is no cultural influence on the utilization of health services.

DISCUSSION

1. The influence of social norms on the use of health services.

Of the 225 respondents who had positive social norms and used health services as many as 88 people (39.1%), while those who had negative social norms and did not use health services were 26 people (11.6%). The results of the chi square test showed that there was a significant influence between social norms and the use of health services with a significance value of 0.002 ($p < 0.005$) meaning that there was an influence between social norms and utilization service, the research is the level of correlation strength/influence is sufficient or strong enough.

Social norms are related to the use of health services in several aspects: public trust in health services can increase the use of health services. This trust can be in the form of trust in the quality of service, professionalism of staff, and cleanliness of facilities, Community social networks, such as participation in informal and formal groups, can affect the use of Puskesmas. People who have better health conditions tend to take advantage of available health services, (Zaid, Z., et.al, 2021)

The influence of social norms in the community on the use of health services includes the community's belief in traditional elders in health services as well as the culture and tradition of shaman treatment. Social norm factors affect the decision to

choose health services where external environmental conditions can affect a person's values, perceptions, preferences and behavior (Sundjaya H, 2023). Socio-cultural aspects not only influence the individual's decisions and actions when suffering from a disease, but also give rise to various kinds of behaviors and efforts from the individual to seek treatment (Zaid, et al., 2020). The role of socio-culture is able to determine the quality of public health. If a community is too fixated on the local socio-culture, it can also affect health behaviors in the community (Sundjaya H, 2023)

Researchers argue that negative social norms, for example, families feel more confident in the existence of non-medical diseases and traditional medicine culture to overcome the diseases they feel compared to medical treatment. Based on the results of the description of the respondents' answers, it is known that most of the respondents still believe in traditional medicine for diseases that are carried out based on hereditary beliefs using available natural ingredients and are believed to have healing properties or through the intermediary of a person (shaman / traditional leader) who is believed to have certain powers in him to eliminate diseases. Most respondents also still believe in diseases caused by violating customary taboos or diseases caused by the disturbance of spirit creatures. Respondents also stated that the culture related to traditional medicine to overcome non-medical diseases is still carried out by the community for generations and is still very reliable to overcome diseases caused by karma, violating taboos, and the disorder of spirit beings.

2. Cultural Influence with the Utilization of Health Services

The results of cross-cultural tabulation with the use of health services, out of 225 respondents who had a positive culture and used health services as many as 119 people (52.9%), while those who had a negative culture and did not use health services had a significant influence with a significance value of 0.00, ($p < 0.05$) meaning that there was an influence between culture and service utilization.

Culture has a significant role in the use of health services, both in improving and hindering access to and utilization of health facilities. Cultural factors affect the decision to choose health services where external environmental conditions can affect a person's values, perceptions, preferences and behaviors (Widyastuty et al, 2023), Cultural aspects not only affect individual decisions and actions when suffering from diseases, but also give rise to various kinds of behaviors and efforts from the individual to seek treatment (Yuniarti et al., 2022).

Researchers argue that traditional medicine is also widely used because it is considered a hereditary inheritance from the family or the heritage of ancestors. In addition, the existence of people who are considered experts who have supernatural abilities in the place of treatment is also one of the reasons why they use traditional medicine. In the village community of Kalar-kalar who still believe in the concept of disease caused by the disorder of spirit creatures, they will trust more in treatment that is traditionally carried out with the help of shamans. Traditional medicine culture has become part of the culture of the

village community, so it is quite well known by the community and easy to obtain, forming a belief that traditional medicine culture can also solve various health problems. The belief that illness can be caused by breaking customs or spirit creatures is a common belief in several cultures and traditions

3. The influence of social norms, culture and the use of health services.

The results of the multivariate test of social and cultural norms on the utilization of health services, the results showed that the significant variable (influential) on social norms was 0.03 (<0.05), while the cultural variable was insignificant at 0.997 ($p>0.05$). The multivariate analysis on the Chi square test proved the strongest influence on the dependent variable, namely the influence of social norms on the Utilization of Health Services at the Kalar-Kalar Health Center, South Aru District.

Social norms are unwritten rules that govern behavior in society. They form the basis of manners, ethics, and manners in society and influence how we behave, speak, and interact with others in a variety of situations. Social norms can vary from culture to culture and change over time. Culture also plays an important role in shaping the norms that a person has. Culture includes values, languages, myths, customs, rituals, laws, and artifacts that are passed down from one generation to the next. Culture influences a person's desires and behavior, and plays a role in health services and health development, because these factors complement each other and are influential in shaping behavior and social interaction in society. Therefore, it cannot be concluded that one is more influential

than the other in the use of services (Nurmala, 2020).

The reasons why village people are afraid to use traditional medicine include the lack of information related to treatment, health service facilities that are far from the reach of the village, easier and more practical medical costs and still high public trust in culture due to the low level of community education. Trust in traditional medicine can grow because of the goal of obtaining cheaper and more efficient treatment. People also think that alternative medicine or traditional medicine is safer than modern medicine because it uses natural ingredients. This public opinion of course also needs to be straightened out because in reality there are several types of traditional medicines or ingredients that are toxic and harmful to health (Widyastuty et al, 2023).

Researchers argue that in the village community of kalae-kalar trust patients believe in traditional medicine first, according to (Widyastuty et al, 2023), health trust is a balance between several aspects in the human body and the environment.

Second, traditional medicine uses a holistic approach to diagnosis and action, rather than looking at parts of the body part by part. Third, traditional medicine is based on individual needs, different people are different even though in the case of the same disease, patient confidence when doing traditional medicine has a great influence on the patient's recovery. The emotional bond between patients and shamans in the traditional medicine procession makes them open to each other to convey health problems, negotiate and work together to

overcome the disease suffered and receive full support from the family.

CONCLUSIONS

Based on the results of research in line with the research objectives, it can be concluded and given research suggestions as follows: there is a significant influence between social norms on the use of health services, and there is a significant influence of culture on the use of health services. And there is an influence of social and cultural norms on the use of health services.

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THE IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM (SMK3) ON NURSES' PERFORMANCE IN THE OPERATING ROOM SIDOWARAS HOSPITAL

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ABSTRACT	Keywords
<p>K3 maintains the safety of nurses in every health service facility to carry out their performance and maintain the safety of recipients or users of health services. To determine the effect of the implementation of SMK3 on the performance of nurses in the operating room of Sidowaras Hospital, Mojokerto Regency.</p> <p>This study uses a quantitative method, analytical observational research design with a cross-sectional approach.. Population this study, all employees of the Sidowaras Hospital operating room, totaling 45 nurses, sample of 35 respondents was obtained. Questionnaire data collection technique. Using the Chi-Square Test and Logistic Regression Test.</p> <p>0.005 < 0.05 means that there is an influence between occupational health and performance. And 0.031 < 0.05 means that there is an influence between occupational safety and performance. Occupational safety has a sig wald value of 0.955 > 0.05 which means that occupational safety does not provide a significant partial influence on performance. Occupational health has a sig Wald value of 0.031 > 0.05 which means that occupational health does not provide a significant partial influence on performance.</p> <p>They need to provide facilities and infrastructure for occupational safety in each work unit, especially operating rooms, to reduce the risk of work accidents.</p>	<p>Occupational Health, Occupational Safety, Nurse Performance</p>

INTRODUCTION

Health workers have the largest human resources (nursing) which play an important role in the success of a health service facility such as a hospital (Abdullah & Spickett, 2019), this is intended to create

professional nursing health workers and contribute optimally in efforts to achieve the goals of health service facilities. Operational activities of occupational health and safety (K3) in nursing professionals are vital activities in health service facilities

(hospitals) through an occupational health and safety management system (Ajubra, Sakka & Harun, 2019). K3 maintains the safety of nurses in every health service facility to carry out its performance and maintain the safety of recipients or users of health services (patients and families) and maintains the safety of health service equipment used by nurses to remain efficient. (Arikhman, 2020).

Researchers (Hasana, 2017) show that K3 is a moral responsibility to protect the safety of fellow human beings, both health service providers (nurses) and patients as recipients of health services. Researchers (Ivana, Widjasena and Jayanti, 2017). Explain that the safety and protection factors at work are one of the safety and protection factors at work that influence nurse performance. Research (Wati, Ramon, Husin & Elianto, 2018) shows that when a nurse has a sense of security and comfort at work, the nurse will perform optimally while (Damanik, 2018) explains that nurse performance plays an important role for an organization, because the low performance of nurses in an organization results in obstacles to achieving organizational goals because nurses are the largest workforce. Research (Elphiana, Yuliansyah and Kosasih, 2017). shows that nurse performance has a vital interest in health facilities, so it requires SMK3 to maintain these vital interests.

Sidowaras Hospital Mojokerto still found that there were work accidents, even though they were in the minor accident category, one of which was caused by nurse negligence and inadequate equipment. Hospitals should provide supporting facilities for nurses such as the availability of work equipment according to work safety standards. The following is data on the number of work accidents that occurred at Sidowaras Hospital in 2021, namely light accidents, 11 serious accidents, 6 or an

accident rate of 40.47%. In 2022, there will be 19 light work accidents and 7 serious work accidents or an accident rate of 61.90%. In 2023, there will be 18 minor accidents and 5 serious accidents. The accident rate is 54/76%. Accidents that occur at Sidowaras Hospital range from serious (scratched by an operating knife, pricked by a needle, contact with patient fluids in the eye) to mild cases (slipping, getting hit). glass doors, sprains/sprains). Work accidents generally occur because nurses do not use the protective equipment provided properly and correctly. The number of accidents that still occur in the operating room at Sidowaras Hospital causes the assessment of nurses' performance to decrease or be less than optimal in the field of nursing services at Sidowaras Hospital.

From the research results obtained variables of occupational health and safety management system SMK3 affect the performance of nurses in the operating room of Sidowaras Hospital, the results of this study are in line with the research hypothesis which states that the occupational health and safety management system SMK3 affects the performance of nurses in the operating room of Sidowaras Hospital. From several theories put forward above, it is clear that the occupational health and safety management system SMK3 affects the performance of nurses in the operating room because comfortable, safe working conditions and the guarantee of occupational safety and health will create healthy, safe and productive nurses so that they have good performance.

METHOD

The design used in this study is observational Analytical is a study that examines the relationship between two or more variables and researchers only need to observe without intervening in the research

subjects. The approach used is Cross Sectional. This study was conducted in the operating room of Sidowaras Hospital in February-May 2024. The population in this study were all employees of the operating room of Sidowaras Hospital, totaling 45 nurses. The minimum sample was 31 respondents with the Simple Random Sampling technique. The independent variables in this study are occupational health and safety while the dependent variable is nurse performance. Research instruments are tools chosen and used by researchers in their activities to collect data in this research. The research instrument is a questionnaire. Data processing and data analysis are carried out by computer using SPSS (Statistical Program and Service Solution). Data collection in this study is primary data, primary data sources, namely age, gender, education, length of service for operating room nurses at Sidowaras Hospital. The independent variable uses an occupational safety and occupational health questionnaire for the dependent variable using a nurse performance questionnaire. The analysis used a f test, chi square..

RESULTS

Table 1. Frequency Distribution of Respondents Based on Age of Nurses in the Operating Room of Sidowaras Hospital.

No.	Age	Frequency (f)	Percentage (%)
1.	20 – 35 years	20	57.1
2.	36 – 40 years	10	28.5
3.	41 – 56 years	5	14.2
	Amount	35	100

Based on table 1, it is known that more than half of the respondents are aged 20-35 years, namely 20 respondents (57.1%).

Table 2. Frequency Distribution of Respondents Based on Gender Nurses in the Operating Room of Sidowaras Hospital.

No.	Gender	Frequency (f)	Percentage (%)
1.	Man	10	28.6
2.	Woman	25	71.4
	Amount	35	100

Based on table 2, it is known that the majority of respondents were female, namely 25 respondents (71.4%).

Table 3. Frequency Distribution of Respondents Based on Education Nurses in the Operating Room of Sidowaras Hospital.

No.	Education	Frequency (f)	Percentage (%)
1.	D3	25	71.4
2.	S1	10	28.5
3.	S2	0	0
	Amount	35	100

Based on table 3, it can be concluded that most respondents have a D3 education, namely 25 respondents (71.4%).

Table 4. Frequency Distribution of Respondents Based on Years of service Nurses in the Operating Room of Sidowaras Hospital

No.	Years	Frequency (f)	Percentage (%)
1.	0 – 5 years	20	57.1
2.	6 – 15 years	10	28.5
3.	16 – 25 years	5	14.2
	Amount	35	100

Based on table 4, it can be concluded that more than half of the respondents have a working period of 0-5 years, namely 20 respondents (57.1%).

Table 5. Frequency Distribution of Respondents Based on Nurses' Occupational Health in the Operating Room of Sidowaras Hospital

No.	Occupational Health	Frequency (f)	Percentage (%)
1.	Good	16	45.7
2.	Not enough	19	54.3
Amount		35	100

Based on table 5, it can be seen that more than half of the respondents have poor occupational health, namely 19 respondents (54.3%).

Table 6. Frequency Distribution of Respondents Based on Nurses' Occupational Safety in the Operating Room of Sidowaras Hospital

No.	Occupational Health	Frequency (f)	Percentage (%)
1.	Good	16	45.7
2.	Not enough	19	54.3
Amount		35	100

Based on table 6, it can be seen that more than half of the respondents have poor work safety, namely 19 respondents (54.3%).

Table 7. Frequency Distribution of Respondents Based on Nurse Performance in the Operating Room of Sidowaras Hospital

No.	Occupational Health	Frequency (f)	Percentage (%)
1.	Good	15	42.9
2.	Not enough	20	57.1
Amount		35	100

Based on table 7, it can be seen that more than half of the respondents have poor performance, namely 20 respondents (57.1%).

Table 8. The Influence of Occupational Health on Nurse Performance in the Operating Room of Sidowaras Hospital

Occupational health	Nurse Performance				Total		P value
	Good		Not enough				
	f	%	f	%	f	%	
Good	1	31	5	14	1	45	0.05
	1	.4		.2	6	.7	
Not enough	4	11	1	42	1	54	
		.4	5	.8	9	.2	
Total	1	42	2	57	3	10	
	5	.8	0	.1	5	0	

Based on table 8. above, the results of the cross-tabulation of respondents who have an understanding health Work Good by (31.4%) on the performance of nurses in the operating room of Sidowaras Hospital and has poor occupational health by (11.4%) on the performance of nurses in the operating room of Sidowaras Hospital. After the tabulation calculation was carried out, a Chi-square test was carried out between the Occupational Health variables and performance showing a Significance value (P-Value) of 0.005 (with a value of $\alpha = 0.05$) meaning that there is an influence between occupational health and performance.

Table 9. The Influence of Occupational Safety on Nurse Performance in the Operating Room of Sidowaras Hospital

Work safety	Nurse Performance				Total	P value
	Good		Not enough			
	f	%	f	%	f	%
Good	1	28.	6	17.	1	45.
	0	5		1	6	7
Not enough	5	14.	1	40	1	54.
		2	4		9	2
Total	1	42.	2	57.	3	10
	5	8	0	1	5	0

From table 9. above, from the results of the cross tabulation of respondents who have a good understanding of work safety and good

performance of 16 people (45.7%), while the understanding of work safety is lacking and has poor performance of 19 people (54.2%). While the calculation of the Chi-square test tabulation between work safety variables and performance shows a significance value (P-value) of 0.031 (with a value of $\alpha = 0.05$), meaning that there is an influence between work safety and performance.

Table 10. Multivariate Logistic Regression Test Results

Variables	B	S.E.	Sig.	Exp(B)	95% CI for EXP(B)	
					Lower	Upper
Work safety	-.069	1.234	.955	.933	.083	10.485
Occupational Health	2.164	1.235	.080	8.704	.773	97.996
Constant	-2.874	1.289	.026	.056		

The results of the logistic regression test show that based on the variables in the equation above: all independent variables have a P Value Wald test (sig) value > 0.05 . This means that all variables do not have a significant partial effect on performance in the model. Occupational safety has a Wald sig value of $0.955 > 0.05$ so that it accepts H_0 or which means that occupational safety does not provide a significant partial effect on performance. Occupational health has a Wald sig value of $0.031 > 0.05$ so that it accepts H_0 or which means that occupational health does not provide a significant partial effect on performance.

DISCUSSION

1. The Influence of Health Management System on Nurse Performance in the Operating Room of Sidowaras Hospital

The results of the study showed that most OK nurses had poor occupational health management of 54.7%. Those who had poor occupational health management turned out to have poor performance of 42.8%. The results of the bivariate test showed that occupational health and performance showed a significance (p-value) of 0.005, meaning that there was an influence between occupational health and performance. This study shows that occupational health affects performance. The cross-tabulation results in table 4.7 show that the poor performance of nurses is caused by the implementation of an inadequate occupational health system as many as 20 respondents (42.8%)

This study is in line with previous research conducted by (Maduningtias et al., 2021) that Occupational health has a significant and positive effect on Nurse Performance. Efforts in the event of work accidents carried out by health providers such as Hospitals are carried out to control, reduce and if possible eliminate them, so that Hospital Occupational Health and Safety Management (SMK3) must be managed properly. SMK3 is something new and is a target in hospital accreditation assessments. Then SMK3 is also a factor that is indirectly related to patients, but plays a very important role in the services provided by the hospital. (Cahyani, 2022).

The lack of occupational health and safety issues is not only in Sidowaras Hospital but also occurs in many places, the Director General of Manpower Supervision and Occupational Safety and Health (PPK and K3) of the Ministry of Manpower also stated that one of the main causes

of work accidents in Indonesia is the low awareness of the importance of implementing occupational safety and health (K3) among industry and the community. Of the 2021 workforce of 121 million, in fact they only learned about K3 problems after entering the world of work (Handayani, ZS, 2023).

According to researchers, health management at Sidowaras Hospital is not good and does not yet have an OHS organization tasked with implementing OHS and supervising the implementation of OHS.nurseoperating room. Therefore, the hospital formed an OHS organization, then the director of Sidowaras Hospital will compile an OHS organization and start planning a medical check-up, namely an initial examination for workers and immunization and providing health insurance so that future occupational health gets a very good score. Sidowaras Hospital must conduct a study and identification of sources of danger, assessment and control of risk factors.

2. Implementation of the Occupational Safety Management System (SMK3) on Nurse Performance in the Operating Room of SidoWaras Hospital

The results of the study showed that work safety and performance showed a significance value (p-value) of 0.031, meaning that there is an influence of work safety on performance.nurse.After testing and analysis of work safety variables andhealthwork on performance when tested separately, both occupational safety and occupational health variables have an influence on performance. In an institution such as a hospital, equipment is always needed to support all

activities to create Occupational Safety so that it can be in the very good category (Arrazy et al., 2014). Based on the results of the cross tabulation in table 4.8, it explains that the poor performance of nurses comes from the implementation of a poor occupational safety system, which is 20 respondents (40%).

According to (Makadao E., 2017) safety is the protection of employees from injuries caused by work-related accidents. By making occupational safety and health one of the company's requirements in employee regulations or employees in hospitals and companies will strive to reduce the number of work accidents to the lowest possible.

The hospital's SMK3 is guided by the fact that the process of its activities begins with the planning, organizing, implementing and controlling steps which aim to make culture not just a program in the hospital (Buntaro, 2015) in line with (Arazzy et al., 2014) and (Buntaro, 2015) the results of the study show that the condition of Sidowaras Hospital requires the provision of facilities, infrastructure for occupational safety in every work unit in the hospital including the operating room to reduce the risk of work accidents that may occur to operating room nurses, therefore According to researchers, Sidowaras Hospital must create a work program that is ongoing and periodic and related roles and design and fulfillment of facilities such as personal protective equipment and complete infrastructure and seek professional resources who have special expertise in the field of SMK3 to manage occupational safety management in hospitals, especially in operating rooms

so that the implementation of occupational safety does not experience a less than good category in the implementation in the future.

Occupational safety and health will create the realization of good employee maintenance. This safety and health must be instilled in each individual employee, with good guidance and coaching so that they realize the importance of occupational safety for themselves and for the company. Occupational safety and health (K3) in the operating room is very important to reduce the risk of accidents and occupational diseases.

If we analyze, the procurement of standard PPE and socialization of its use to nurses is very important to improve nurse compliance in implementing occupational safety guidelines. Regular training on occupational health and safety can also improve occupational health and safety behavior.

3. Occupational Health and Safety Management (SMK3) with Nurse Performance in the Operating Room of SidoWaras Hospital

The results of the joint test of the P value of the Wald test (Sig) > 0.05, meaning that all variables do not have a significant partial effect on Performance in the model. Occupational safety does not provide a significant partial effect on Performance. Occupational health does not provide a significant partial effect on performance. Overall operating room nurse performance is in the category of less than good and good has not reached very good. (Nursalam, 2017) explains that the standard of nurse performance is quality nursing services that have been given to patients which is an

advantage compared to other services because it is given 24 hours and continuously. where a bad work environment will affect the level of employee performance. (Dhaini et al., 2016) stated that 30% of nurse performance has not reached the good category influenced by factors of quality, quantity, punctuality, effectiveness, independence and work commitment.

In improving the performance of nurses at Sidowaras Hospital according to the results of the study which still show in the category of less, according to the researcher it is necessary to strengthen individual factors (psychological and organizational), quality, quantity, punctuality, effectiveness, independence and work commitment to improve the welfare of nurses. The operating room work environment also greatly influences the performance of nurses that the work environment both physically and non-physically has positive and negative impacts where a poor work environment will affect the work of operating room nurses So that in the future the performance of operating room nurses at Sidowaras Hospital gets a very good score.

The results of this study are not the same as the study (Dodi W., 2020) research on employees of PT. Apie Indo explanatory research method with 80 samples. shows that occupational health has a significant influence on employee performance. The employee performance variable (Y) is significantly influenced by occupational safety (X1) and occupational health (X2). Occupational safety has the most dominant influence, amounting to 0.407, on employee performance.

CONCLUSIONS

After the analysis was conducted, this study concluded that most of the implementation of the occupational health management system was not good and most of the implementation of occupational safety (SMK3) on nurse performance was not good. And there is an influence of the implementation of the occupational health and safety management system (SMK3) on the performance of nurses in the Operating Room of SidoWaras Hospital in 2024. When a joint test was conducted, there was no influence of the Implementation of the Occupational Health and Safety Management System (SMK3) on Nurse Performance in the Operating Room of Sido Waras Hospital, Mojokerto Regency, meaning that both are very important, none is dominant.

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ADOLESCENT ENGAGEMENT IN PHYSICAL ACTIVITY AMID PM2.5 POLLUTION IN SUPHAN BURI, THAILAND

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ABSTRACT	Keywords
<p>This study analyzes factors influencing physical activity (PA) among adolescents during periods of elevated ambient PM2.5 concentrations in Suphan Buri, Thailand. Utilizing a cross-sectional design, 227 adolescents completed an online questionnaire assessing their knowledge of safe physical activity during high PM2.5 periods and their engagement in such activities. Descriptive statistics and Chi-Square tests were used for analysis, with significance set at $p < .05$. Results indicated that academic faculty ($\chi^2 = 12.10$, $p = .033$) and Knowledge of PA during periods of elevated ambient PM2.5 concentrations ($\chi^2 = 13.91$, $p = .000$) significantly influenced engagement in physical activities during elevated PM2.5 periods. These findings suggest that adolescents with certain educational backgrounds and greater awareness of protective measures are more likely to remain active despite pollution risks. The study underscores the need for targeted educational interventions to promote safe physical activity among adolescents in polluted environments, contributing to public health strategies aimed at mitigating the adverse effects of air pollution on adolescent.</p>	<p>Adolescent, air pollution, particulate matter 2.5, physical activity, Thailand</p>

INTRODUCTION

Physical activity (PA) includes any movement that requires energy, encompassing leisure activities, travel, work, and household chores (World Health Organization, 2024). For adolescents, the Physical Activity Guidelines for Americans recommend at least 150 minutes of moderate-intensity activity or 75 minutes of vigorous activity weekly, supplemented by muscle-strengthening exercises twice a week. (Centers for Disease Control and Prevention, 2024). Regular PA enhances physical fitness, bone health, mental well-being, and cognitive function, forming a foundation for lifelong health (Qiu et al., 2023). Conversely, insufficient PA is a significant risk factor for noncommunicable diseases (NCDs) and increases pressure on healthcare systems (Dadras et al., 2024). Globally, the prevalence of insufficient physical activity has risen from 23.4% in 2000 to 31.3% in 2022, highlighting an escalating public health concern (Strain et al., 2024).

Environmental challenges, particularly air pollution, create new barriers to safe PA, especially in urban and industrialized areas with compromised air quality (Manisalidis et al., 2020). Particulate matter 2.5 (PM 2.5)—tiny particles that penetrate the lungs and enter the bloodstream—has been linked to respiratory and cardiovascular conditions (California Air Resources Board, 2024). In Suphan Buri Province, rural Thailand, agricultural practices, *burning in agricultural areas*, result in elevated PM 2.5 levels (Junpen et al., 2018), raising health risks for local adolescents engaged in outdoor activities and sports. While previous studies often focus either on promoting PA or examining air pollution impacts, few explore the intersection of these issues among adolescents (Imman et al., 2023; Fakmit & Wongwat, 2022;

Malaicharoen et al., 2022).

This study applies the PRECEDE framework (Green & Kreuter, 2005) to analyze factors influencing physical activity (PA) among adolescents during periods of elevated ambient PM2.5 concentrations in Suphan Buri, Thailand. Understanding how PM2.5 pollution affects adolescent physical activity is crucial for developing effective health promotion strategies. This study addresses a significant public health issue by exploring the interplay between environmental hazards and health behaviors in a vulnerable population. Findings from this research may inform public health strategies and policies to create healthier, safer environments that encourage physical activity among adolescents, thereby mitigating the adverse effects of air pollution on this age group.

METHOD

This cross-sectional survey was conducted from November 2020 to February 2021 in Suphan Buri Province, Thailand, targeting first-year students aged 18 years or older enrolled during the 2020 academic year. The total population comprised 527 students. Using Taro Yamane's sample size formula (Yamane, 1973), a sample size of 227 participants was determined to achieve a 95% confidence level with a 5% margin of error. A multi-stage sampling method was employed to ensure balanced representation across different subgroups within the population.

Inclusion criteria required participants to be first-year students aged 18 years or older, engaged in physical activity, and proficient in Thai language skills, including speaking, reading, writing, and comprehension. Exclusion criteria included individuals without access to a smartphone, computer, or the internet, as the survey was administered online. Participants who

initially consented but later chose to withdraw were also excluded.

Data were collected using a 37-item online self-administered questionnaire, designed to be completed within 10 to 15 minutes. The questionnaire was structured into four sections:

1. **Predisposing Factors:** 18 items assessing knowledge, attitudes, and stress levels related to physical activity during elevated PM2.5 periods.
2. **Enabling Factors:** 3 items evaluating the availability of exercise facilities and policies.
3. **Reinforcing Factors:** 12 items exploring social and environmental influences, including support from peers, teachers, and family.
4. **Physical Activity During Elevated PM2.5 Periods:** 4 items assessing participants' activity levels and adaptations in response to air quality concerns.

The questionnaire underwent content and construct validity assessment by a panel of three experts in adolescent health. The Index of Item Objective Congruence (IOC) scores ranged from 0.67 to 1.00, indicating high item congruence. Reliability was evaluated through a pilot test with 30 first-year students from a similar population in Suphan Buri Province. Internal consistency was assessed using Cronbach's Alpha Coefficient, yielding satisfactory reliability across all sections:

- **Predisposing Factors:**
 - Knowledge: $\alpha = 0.705$
 - Attitudes: $\alpha = 0.811$
 - Stress Level: $\alpha = 0.899$
- **Enabling Factors:** $\alpha = 0.809$
- **Reinforcing Factors:**
 - Peer Support: $\alpha = 0.839$

- Teacher Support: $\alpha = 0.949$

- Family Support: $\alpha = 0.970$

- **Physical Activity During Elevated PM2.5 Periods:** $\alpha = 0.794$

These coefficients indicate acceptable to excellent internal consistency for the instrument's scales.

Data Analysis

Descriptive statistics, including mean, standard deviation, and percentage, were calculated to summarize sample characteristics such as gender, faculty, underlying health conditions, and age. Inferential analysis was conducted using Chi-square tests to assess relationships among predisposing, enabling, and reinforcing factors in relation to physical activity during elevated PM2.5 periods. This approach provided insights into how these factors influenced participants' physical activity under compromised air quality conditions.

Variables

- **Independent Variables:** Predisposing factors (knowledge, attitudes, stress levels), enabling factors (availability of exercise facilities and policies), and reinforcing factors (peer, teacher, and family support).
- **Dependent Variable:** Engagement in physical activity during periods of elevated ambient PM2.5 concentrations.

Justification of Methods and Study Area

- **Methodology:** A cross-sectional survey design was appropriate for assessing the prevalence and relationships between variables at a

single point in time. The use of an online self-administered questionnaire facilitated data collection during the COVID-19 pandemic, ensuring participant safety and compliance with social distancing measures.

- **Study Area:** Suphan Buri Province was selected due to its rural setting and prevalent agricultural practices, notably crop burning, leading to elevated PM2.5 levels. This context provided a relevant environment to study the impact of air pollution on adolescent physical activity.
- **Scope:** The study focused on first-year students in Suphan Buri Province, providing insights into a specific demographic within a defined geographical area.

Ethical Considerations

The study was approved by the College's Human Research Ethics Committee (Approval Document No. PHCSP-S2563/038). Written informed consent was obtained from all participants, adhering to the ethical guidelines of the World Medical Association Declaration of Helsinki for research involving human subjects. Participant information was kept confidential, with data anonymized and securely stored within the college's data system. Access to data was restricted to researchers with secure passwords. No financial incentives were provided to participants.

RESULTS

The demographic analysis of the sample, comprising 227 participants, revealed that 52 were male (22.9%) and 175 were female (77.1%). The majority were enrolled in the Faculty of Public Health and

Allied Health Sciences, totaling 87 participants (38.7%), followed by the Faculty of Nursing with 62 participants (27.3%), and the Faculty of Sports and Health Sciences with 30 participants (13.2%). Most participants were 19 years old, accounting for 139 individuals (61.2%), with 20-year-olds comprising 42 participants (18.5%) and 18-year-olds representing 11.9%. Additionally, the majority of participants reported no underlying health conditions, totaling 205 individuals (90.3%).

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Table 1. Factors associated with physical activity amid ambient PM 2.5 air pollution among adolescents in Suphan Buri Province, Thailand (n=227)

Factors	df	χ^2	p-value
Predisposing factors			
1. Gender	1	0.080	.777
2. Age (year)	1	2.673	.102
3. Academic faculty	5	12.106	.033
4. Underlying Health Conditions	1	0.249	.618
5. Knowledge of PA during periods of elevated ambient PM2.5 concentrations	1	13.910	.000
6. Attitudes Toward PA during the PM2.5 situation	1	7.512	.060
7. Stress	1	0.409	.522
Enabling Factors			
8. Access to PA facilities during periods of elevated ambient PM2.5 concentrations	1	0.517	.472

Factors	df	χ^2	p-value
9. Access to PA equipment during periods of elevated ambient PM2.5 concentrations	1	0.310	.578
10. Institutional policy about PA the PM2.5 situation	1	0.081	.776
Reinforcing Factors			
11. Peer support	1	0.011	.915
12. Instructors support	1	0.001	.969
13. Family support	1	0.192	.662

Chi-square tests were conducted to examine associations between various factors and physical activity engagement during elevated PM2.5 periods. Two factors showed statistically significant associations:

1. **Academic Faculty Enrollment:** There was a significant association between the faculty in which participants were enrolled and their engagement in physical activity during high PM2.5 periods ($\chi^2 = 12.10$, $p = .033$).
2. **Knowledge of Physical Activity During Elevated PM2.5 Periods:** Participants' knowledge levels were significantly associated with their physical activity engagement under high PM2.5 conditions ($\chi^2 = 13.91$, $p < .001$).

These findings suggest that both the academic discipline of study and the level of knowledge regarding safe physical activity practices during periods of elevated PM2.5 concentrations are important factors influencing adolescents' engagement in physical activity under compromised air

quality conditions. Detailed is showed in Table 1.

DISCUSSION

This study utilized the PRECEDE framework to analyze factors influencing physical activity (PA) among adolescents during periods of elevated ambient PM2.5 concentrations. The findings indicate that predisposing factors, such as knowledge and attitudes toward PA in polluted environments, were at moderate levels among participants. This finding according with previous research indicating that awareness and attitudes regarding health behaviors in polluted environments are often limited, with knowledge gaps significantly influencing engagement (Marín et al., 2024; Alzayani et al., 2022). Moderate levels of awareness may be insufficient to drive consistent PA participation during heightened health risks, such as PM2.5 exposure, where a deeper understanding of health implications could play a protective role by promoting safer PA practices (Siddique et al., 2024; Quintyne & Kelly, 2023).

Enabling factors, including access to PA facilities and equipment during high PM2.5 periods, were also moderate, highlighting potential logistical barriers to safe exercise. Additionally, while some participants reported the existence of institutional policies supporting PA during pollution episodes, the moderate engagement levels observed suggest these policies may lack the rigor necessary to effect meaningful behavioral changes (Wangsan et al., 2024).

Reinforcing factors, particularly social support, emerged as highly influential, with substantial encouragement from friends, instructors, and family reported by a significant portion of participants (Davis et

al., 2021). High social support is a significant motivator for PA engagement, particularly in challenging environments, and can reinforce persistence in maintaining healthy behaviors even in adverse conditions like high pollution levels (Guo et al., 2022).

Further analysis reveals that academic faculty is significantly associated with PA engagement ($\chi^2 = 12.10$, $p\text{-value} = .033$). Students in health-related faculties display greater awareness of PM_{2.5} risks and are more likely to engage in PA safely, highlighting how academic background can influence health behaviors (Rendon-Marin et al., 2024). Tailoring PA interventions to academic disciplines may enhance their efficacy by aligning programs with specific knowledge levels and risk perceptions inherent in different fields of study. Knowledge of PA during periods of elevated ambient PM_{2.5} concentrations also showed a strong association with PA engagement ($\chi^2 = 13.91$, $p\text{-value} = .000$), knowledge as a key predisposing factor. Participants with a deeper understanding of PA safety during amid ambient PM_{2.5} were more likely to safe PA, equipped with adaptive strategies such as exercising indoors or using protective equipment (Xiong et al., 2018). Marín et al. (2024) found that individuals well-informed about pollution risks tend to adjust their exercise routines to minimize exposure.

Neglecting to address these disparities may result in decreased physical activity among students during high pollution periods, increasing the risk of noncommunicable diseases and placing additional strain on healthcare systems. Furthermore, without proper guidance, students may continue to engage in unsafe physical activities during elevated PM_{2.5} periods, heightening their susceptibility to pollution-related health issues.

To mitigate these risks, it is imperative to implement targeted educational programs that raise awareness about the health implications of PM_{2.5} and promote safe physical activity practices. Enhancing access to indoor exercise facilities and fostering supportive social environments can further encourage students to maintain physical activity levels safely during periods of elevated air pollution. By addressing these factors, educational institutions can develop effective public health strategies that promote safe physical activity among students, even in challenging environmental conditions.

Limitations

Potential limitations include reliance on self-reported data, which may be subject to recall bias or social desirability bias. Additionally, the cross-sectional design limits the ability to infer causality between variables. Access to technology was a prerequisite for participation, potentially excluding individuals without internet access, which may affect the generalizability of the findings.

CONCLUSIONS

This study underscores the significant impact of academic affiliation and knowledge on students' physical activity (PA) during periods of elevated PM_{2.5} concentrations. Students from health-related faculties, who typically possess greater awareness of pollution risks, are more likely to adjust their exercise routines to maintain safe PA levels during such periods. Conversely, students from non-health-related faculties may lack this critical knowledge, potentially leading to reduced PA or engagement in unsafe practices during high pollution episodes. These findings highlight the need for targeted educational interventions across all academic disciplines

to enhance students' understanding of safe PA practices amid poor air quality, thereby promoting health-conscious behaviors and mitigating the adverse effects of air pollution on student health.

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THE EFFECT OF RHEUMATIC GYMNASTIC AND SHALAWAT NARIYAH ON THE PAIN LEVEL OF GOUT ARTHRITIS PATIENTS

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ABSTRACT	Keywords
Uric acid levels in the blood exceeding normal limits can cause a buildup in the joints and organs. This buildup causes the joints to feel sore, painful and inflamed. This study aimed to determine the effect of Rheumatic Gymnastics and Shalawat Nariyah on the pain level of patients with gout arthritis. This study used a pre-experimental one-group pre-posttest design. A total of 34 respondents were obtained by total sampling. The instrument was the Numeric Rating Scale. The results showed that before being given the intervention, 23 people (67.6%) experienced moderate pain, while after being given the intervention, 19 people (55.9%) experienced mild pain. The hypothesis was tested using the Wilcoxon test with the results ($P = 0.000 \leq \alpha 0.05$), meaning that Rheumatic Gymnastics and Shalawat Nariyah had an effect on pain levels in patients with gout arthritis. Rheumatic Gymnastics and Shalawat Nariyah can stimulate an increase in the release of endorphin hormones and cause a relaxing effect on reducing pain in patients with gout arthritis.	Arthritis, Gout, Gymnastic, Pain level, Musical therapy

INTRODUCTION

High levels of uric acid in the blood that exceed normal limits can cause a buildup in the joints and other organs of the body. This buildup causes the joints to feel sore, painful, and inflamed (Pailan et al., 2023). Gout arthritis pain usually appears suddenly at night, with recurrent and excruciating symptoms. The impact of this

recurrent pain can cause anxiety, abnormal heart rate, disruption of blood circulation and respiratory rate, thus disrupting daily activities. (Sari et al., 2022). The need for non-pharmacological therapy to overcome the impact of prolonged pain.

The World Health Organization (WHO) states that patients with hyperuresemia increase yearly. This

increase also occurred in developing countries, one of which is Indonesia. The incidence of gout is around 1-4% of the general population. In Western countries, men suffer from gout more than women, 3-6%. In some countries, the prevalence can increase by 10% in men and 6% in women in the age group ≥ 80 years. The annual incidence of gout is 2.68 per 1,000 people. Worldwide, gout is increasing gradually due to poor eating habits such as poor diet, lack of exercise, obesity, and metabolic syndrome (Arlinda et al., 2021).

Based on the results of Indonesia Basic Health Research (*Riskesdas*) 2018, the prevalence of gout based on diagnosis in health workers in Indonesia was 11.9%, and the prevalence of gout based on diagnosis or symptoms was 24.7%, with the highest prevalence at the age of 75 years, with a high profile (Pailan et al., 2023). Gout arthritis in East Java Province is 24.3% in men and 11.7% in women (Marlina, 2022).

In Lamongan Regency, Gout arthritis was included in the top 10 significant diseases 2016. Verbal information from the Lamongan District Health Office on March 25, 2019, stated that people only do uric acid checks if they feel symptoms of joint pain so that hyperuricemia diagnosis data cannot be explicitly reported (Anggraini & Utami, 2022).

Based on an initial survey at the Village Health Post (poskesdes) of Tambakpelo Village, Turi District, Lamongan Regency, there were 37 people with gout arthritis. The results of the initial assessment using the Numeric Rating Scale (NRS) of 37 people with gout arthritis, three people stated that they experienced moderate to severe pain complaints, with two people stating a pain scale of 6 and one other person saying a pain scale of 8. The pain complaints that are felt interfere with their daily activities.

A greater concentration of uric acid in the serum can lead to the accumulation of monosodium urate crystals. Furthermore, an inflammatory response occurs and continues with the occurrence of gout attacks. If it settles in the peripheral parts of the body, such as the big toe, hands, and ears, it causes pain (Scientific, 2021). Pain in gout arthritis has distinctive characteristics and is characterized by sudden attacks. The affected joint area feels like burning, swelling, redness, heat, and stiffness. Usually, this pain occurs at night or upon waking up. When the air is cold, the joints of the feet are painful, stiff, and immobile. This can cause daily activities to be disrupted (Jauhara et al., 2022).

Gout arthritis can be treated both by pharmacological treatment and non-pharmacological treatment. To overcome complaints of pain in patients with gout arthritis, pharmacological therapy usually given is painkillers/analgesics of the NSAID (non-steroidal anti-inflammatory disease) group, such as ibuprofen and diclofenac sodium. Often, pharmacological treatment in the long term can cause various side effects. Usually, non-pharmacological efforts are more widely chosen (Fadilah & Novitayanti, 2021).

One of the efforts in overcoming pain in patients with gout arthritis is utilizing cold compresses, which are only effective for acute cases or pain less than 48 hours. Rheumatic gymnastics is more effective because it only takes three times a week. Also, the effect of rheumatic gymnastics is faster in reducing pain, namely a shorter duration of time with an average difference in the reduction scale of 2.53 pre-post.

Rheumatic gymnastics is a physical exercise in non-pharmacological therapy used in patients with gout arthritis. Rheumatic gymnastics can stimulate the increase and release of endorphins, so rheumatic gymnastics already contains

elements related to dynamic muscle contractions and involves many muscles and joints that can reduce heart rate and pulse rate to cause pain and reduce joint stiffness. Rheumatic gymnastics can also divert a person's perception of pain because this adaptation is an efficient function to relieve pain (Masyuta & Rejeki, 2022).

One of the non-pharmacological therapies is spiritual therapy, more commonly called psychoreligious therapy. Psychoreligius contains religious elements that can generate hope, confidence, and faith that increase the immune system in sick people to accelerate the healing process. One of them is Sholawat Nabi, which contains poems about the life of the Prophet and sholawat for the Prophet, which will increase our closeness to Allah (Lestari et al., 2023).

Considering many shortcomings in overcoming pain reduction in patients with gout arthritis, researchers modify these efforts by combining complementary therapy and spiritual therapy to provide rheumatic gymnastics therapy, and shalawat nariyah can add a relaxing effect where relaxation can reduce pain levels in patients with gout arthritis. This is in line with research in the form of case studies conducted by Tri Novana et al. (2021); the pain scale experienced by clients can be reduced using rheumatic gymnastics therapy. There was a decrease in the pain scale in the first client and the second client after receiving rheumatic gymnastics therapy. In another study conducted by Navila (2021) in Sampang Regency, the results showed that there were significant changes between before being given sholawat music therapy and after being given sholawat music therapy.

METHOD

This research design used pre-experimental with a one-group pre-post-test approach with a sample of 34 people with gout arthritis aged 26 - 45 years using a total sampling technique. This research was conducted in Gabus Hamlet, Tambakploso Village, Turi District, Lamongan Regency, from February to March 2024. The researchers used the Numeric Rating Scale (NRS) pain assessment instrument and Standard Operating Procedure (SOP) intervention of Rheumatic Gymnastics and Sholawat Nariyah. The intervention was given for two weeks, with six meetings for 20 minutes. Pain level data were analyzed using the Wilcoxon test with significant results of $p < 0.05$.

RESULTS

Table 1. Frequency Distribution of General Characteristics of Patients with Gout Arthritis in Gabus Hamlet, Tambakploso Village, Turi District, Lamongan Regency 2024.

Characteristics of Respondents	Category	f	%
Gender	Male	7	20.6
	Female	27	79.4
Age	26-35 years old	6	17.6
	36-45 years old	28	82.4
Education	Elementary school	4	11.8
	Junior high school	10	29.4

Characteristics of Respondents	Category	f	%
	Senior high school	19	55.9
	Diploma Bachelor	1	2.9
Job	Housewife	22	64.7
	Self-employed	4	11.8
	Farmer	7	20.6
	Civil servant	1	2.9

Table 1 shows that of the 34 respondents, almost all are female, 27 people (79.4%) and a small proportion were male, amounting to seven people (20.6%). The table above also shows that almost all respondents are 36 - 45 years old, 28 people (82.4%), and a small proportion are 26 -35 years old, six people (17.6%).

Table 1 also shows that of the 34 respondents, more than most have a high school education, 19 people (55.9%), almost some have a junior high school education, ten people (29.4%), a small proportion have an elementary education, four people (11.8%) and a Diploma/Bachelor's degree as many as one person (2.9%). Of the 34 respondents, more than most were housewives: 22 people (64.7%), a small proportion worked as farmers, seven people (20.6%), a small proportion worked as entrepreneurs, four people (11.8%) and worked as civil servants as many as one person (2.9%).

Table 2. Pain Level of Gout Arthritis Patients Before and After Intervention in Gabus Hamlet, Tambakploso Village, Turi District, Lamongan Regency 2024

Pain measurement	Pre-test		Post-test	
	F	%	F	%
No pain	0	0%	8	23.5%
Mild pain	7	20,6%	19	55.9%
Moderate pain	23	67,6%	7	20.6%
Severe pain	4	11,8%	0	0%
Total	34	100%	34	100%

Table 2 shows that before (pre-test) given the intervention of Rheumatic Gymnastics and Sholawat Nariyah, more than most of the gout arthritis patients experienced moderate pain, as many as 23 people (67.6%), and after (post-test) more than most of the gout arthritis patients had mild pain levels as many as 19 people (55.9%).

Table 3. The Effect of Rheumatic Gymnastics and Sholawat Nariyah Interventions on Pain Levels in Patients with Gout Arthritis in Gabus Hamlet, Tambakploso Village, Turi District, Lamongan Regency 2024

Pain measurement	Min - Max	Mean	SD	p
Pre-test	3-7	4.68	1.364	
Post-test	0-6	2.15	1.635	

Based on Table 3, the average pain intensity before the intervention of Rheumatic Gymnastics and Sholawat

Nariyah is 4.68, and the median value is 4.00, with the highest pain intensity being seven and the lowest pain intensity being 3. The average pain intensity after (post-test) is 2.15, and the median value is 2.00, with the highest pain intensity at six and the lowest at 0.

DISCUSSION

The results showed a significant difference between pain levels before and after the intervention of Rheumatic Gymnastics and Sholawat Nariyah for people with gout arthritis. Clinical symptoms of gout arthritis are acute attacks that are monoarticular or attack only one joint. Patients complain of swelling, redness, severe pain, and heat accompanied by impaired movement of the affected joint, which occurs suddenly, reaching a peak of less than 24 hours (Hayati et al., 2023). According to the American Geriatric Society, exercise such as gymnastics at least three times a week can significantly improve the health of patients with arthritis, including gout arthritis (Aminah et al., 2022).

Gymnastics can stimulate an increase in the release of endorphins. Endorphins provide analgesia by blocking the process of releasing substance p from sensory neurons so that the process of transmitting pain impulses in the spinal cord becomes inhibited and the pain sensation is reduced. Rheumatic gymnastics has a direct psychological effect, which can help provide relaxation (Elviani et al., 2022). The research results by Hasanah et al. (2023) showed a decrease in the pain scale after doing rheumatic gymnastics therapy because it is caused by the production of endorphine hormones, which can reduce the pain scale during the gymnastics process.

This research is also in line with research conducted by Khairiyah et al. (2022) sholawat, which was applied two times a day for two days with a time of 10-

15 minutes. Clients experienced a decrease in pain from moderate to mild scale pain levels, pulse frequency improves, and anxious expressions decrease. Sholawat can also provide peace and tranquility in psychotherapy or psychological aspects; sholawat can also be an alternative non-pharmacological pain treatment to reduce pain intensity. Based on religious statements, faith plays a vital role in a person's inner peace (Supriyanti, 2020).

According to researchers, before being given the intervention of Rheumatic Gymnastics and Sholawat Nariyah, people with gout arthritis complained of pain due to age, diet, activity, and gender factors. People with gout arthritis experienced moderate to severe pain with complaints of pain primarily felt in the fingers, and pain was usually felt in the morning or at night. After being given the intervention, there was a decrease in pain because the intervention could increase the production of endorphins, which made the body more relaxed and decreased the pain sensation.

The results of this study are also reinforced by research conducted by Masyuta and Rejeki (2022) that rheumatic gymnastics has an effect on reducing the intensity of the pain scale in patients with gout. Researchers also explained that rheumatic gymnastics can stimulate the increase and release of endorphin hormones. Rheumatic gymnastics also contains elements related to dynamic muscle contractions and involves many muscles and joints that can reduce heart rate and pulse rate, thereby reducing pain and joint stiffness.

According to Satria & Ningrum (2023), exercise or gymnastics, in this case including rheumatic gymnastics, has a direct psychological effect helping to give a feeling of relaxation, reduce tension, and increase feelings of pleasure because, during gymnastics, the pituitary gland increases

production or increases beta-endorphin levels. Rest may relieve pain but only decreases the pain scale with a small range of decrease because rest, such as sleeping or sitting still without movement, does not stimulate the release of endorphins. Movement such as rheumatic exercises and exercise has a better impact on people with joint pain than rest.

This research is also in line with research conducted by Navila (2021), it was found that there were significant changes between before being given sholawat music therapy and after being given sholawat music therapy. This is because sholawat physically contains elements of the human voice, while the human voice is a fantastic healing tool and the most accessible tool. (Lestari et al., 2023). Praying to the Prophet also has good benefits that can make the body produce the endorphin hormone, which is a natural endorphin hormone produced by the human body and functions as a natural pain reliever (Khairiyah et al., 2022).

CONCLUSIONS

The combination of rheumatic gymnastics therapy and sholawat nariyah can reduce the pain level of gout arthritis patients. This therapy positively affects the patient's psychology by stimulating the pituitary gland to produce endorphin hormone, which relaxes the body and reduces the subtle pain response.

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IMPLEMENTATION OF “GERINTING” AS A SIMULTANEOUS INTERVENTION TO PREVENT STUNTING IN MOJOKERTO REGENCY

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ABSTRACT	Keywords
Strategies for solving the stunting problem so far are still limited to curative and rehabilitative targets for targets who have been diagnosed with stunting. A problem strategy is needed that focuses on promotive and preventive efforts targeting the community (community) so that the chain of stunting can be broken. The aim of this research is to determine the implementation of the Gerinting movement in Kab. Mojokerto. The design of this research is a quasi-experimental one group pretest posttest design. The research subjects were determined using purposive sampling, namely posyandu at UPT. Jetis Health Center. Data collection uses a questionnaire. The results of the normality test showed that the data was not normally distributed. Hypothesis testing used the Wilcoxon test. The results showed that there was an increase in the mean knowledge score of mothers before the Gerinting movement was 32.80 (SD=9.768), after the Gerinting movement the mean knowledge score was 87.10 (SD=5.677) and the mean action score of mothers before mentoring was 25.83 (SD = 19.122), after providing assistance in the form of counseling, demonstrations and practicums to cadres, the average action score increased to 79.17 (SD = 9.476). In the statistical test results, there was a significant difference before and after the intervention was given with a value of 0.000, ($p<0.05$). This shows that there is an influence of the Gerinting movement on mothers' knowledge and actions regarding stunting.	Interventio, stunting

INTRODUCTION

Stunting is a disorder of children's growth and development due to chronic malnutrition and recurrent infections. Toddlers are stunted by their substandard height. The Mojokerto Regency Government has succeeded in reducing the

stunting rate of toddlers by 22.3 percent in 2 years. The strategies implemented range from regulation, specific interventions, to innovation and digitalization.

The stunting rate in Mojokerto Regency reached 27.4 percent in 2021 based on the Indonesia Nutrition Status Survey

(SSGI). In 2022, stunting cases of toddlers dropped to 11.6 percent.

Meanwhile, based on electronic data from Community-Based Nutrition Recording and Reporting (E-PPGBM) as of August 2022, the number of stunted children under five in Mojokerto Regency is 2,132 children or 4.81 percent of the number of children measured. 2,248 children were wasting and 2,137 underweight children were underweight. The number of children measured at that time was 44,324 children out of a total target of 79,773 children.

In 2023, the percentage of stunted children under five in Mojokerto Regency will increase slightly to 5.01 percent of the number of children weighed. Because the number of stunted children under five is currently 2,219 children. Meanwhile, the number of children under five weighed was 44,257 children or 53.59 percent of the weighing target of 82,591 children. Toddlers wasting 2,849 children or 6.44 percent and undernourished toddlers 2,895 children or 6.54 percent.

Specific and sensitive interventions, as well as program innovations, have been implemented as an effort to accelerate stunting reduction.

Stunting control policies in general seem to still be at the level of the ivory tower, while at the grassroots level itself, which is the spearhead of efforts to accelerate stunting control, the issue of stunting still seems to sound strange (Saputri & Tumanger, 2019).

Stunting interventions in Indonesia have been carried out both through specific and sensitive intervention strategies. Coordination at the provincial level has not been found to be cross-sectoral coordination so that existing programs and activities run each with different goals (Tampubolon, 2020).

Sensitive interventions to prevent stunting mostly focus on handling infants or

toddlers who have experienced stunting (Husen et al., 2022).

One of the interventions in stunting prevention is the KURMACATIN (Joint Course for Brides-to-be) activity. KURMACATIN is an innovation for stunting prevention from upstream. This innovation targets an increase in the knowledge of brides-to-be about reproductive health in relation to stunting prevention starting from 1000 days of life. The results showed that there was a significant difference between the knowledge before and after KURMACATIN (Agustiawati, 2023)

The Mojokerto Regency Government, since 2021 through Perbup No. 66 of 2021, has established regulations to accelerate integrated stunting reduction. Followed by the formation of a stunting reduction acceleration team from the district level to the sub-district level. In 2023, the Stunting Reduction Acceleration Team will be formed at the Village and Urban Village levels.

Gerinting is a simultaneous intervention movement for stunting prevention which is one of the innovative programs for handling stunting in Mojokerto Regency.

This stunting prevention innovation movement is not only limited to curative and rehabilitative targets, but is focused on promotive and preventive efforts with community targets. This is what causes Gerinting to be different from most innovations that have just combed into stunting treatment and rehabilitation.

The Gerinting Movement is carried out once a month at the Posyandu Prima activity in the UPT Regional Village. Jetis Health Center. The Gerinting activity is carried out in cluster 1 with the target of Adolescent Services, Pregnant Women, Childbirth, Postpartum and Toddler Services.

The Gerinting Movement is an activity that assists the first 1000 days of life, so it is hoped that through this program the knowledge, attitudes, and skills of the community towards stunting prevention efforts can be implemented as early as possible.

Therefore, this study focuses on the implementation of the Gerinting movement in Mojokerto Regency. In this case, it is about changing people's knowledge, attitudes, and behaviors in an effort to prevent stunting as early as possible, before and after the implementation of Gerinting.

METHOD

Research Design

This study uses a type of Quasi experimental research to determine Gerinting's intervention on community knowledge, attitudes and skills in the prevention and handling of stunting in UPT. PKM Jetis. The research design is a one group pretest posttest design without a control group.

Population, Sample, Sampling

This research was carried out at UPT. Jetis Health Center, as a stunting locus area of Mojokerto Regency. The research was conducted on Prima posyandu cadres. The population in this study was all health cadres of the Prima Posyandu UPT Jetis 1 Health Center with a total of 170 respondents. The sample size was determined by using the Raosft sample size with a margin of error of 5% and a confidence level of 95%, a sample of 119 respondents was obtained by the consecutive sampling method.

Intervention Procedure

Prima posyandu health cadres who are willing to participate in the research are given an explanation of their participation in the research, before approving the consent sheet. Subsequently, respondents were given a pretest related to knowledge, attitudes and skills in stunting prevention and handling.

The intervention of the prime posyandu was carried out 2 times with the following activities:

Counseling/education on stunting prevention and handling, Demonstration and practicum on stunting prevention and handling in the community

At the posyandu the following month after the target of participating in the prima posyandu was given a posttest about knowledge, and actions on stunting prevention and handling.

The results of the normality test were obtained with data that were not normally distributed, hypothesis tests using the Wilcoxon test.

Instruments

There are two types of instruments used in this study. To assess the knowledge of the respondents, the MCQ test knowledge questionnaire instrument has been tested for validity and reliability with Cronbach's alpha of 0.760 with a sensitivity ranging from 0.450 to 0.829. The instrument for assessing Actions uses a likert scale against 25 statements.

Ethical Approval

Approval of ethics permit number 141/EC/KEPK-HW/03/2024 was requested to the Research Ethics Commission of the Hafsyawati Zainul Hasan Genggong Health Office. The ethical requirements and rights of the respondents have been met during the research process to collect data and not cause any harm or interference.

RESULTS

Table 1 Characteristics of health cadres of the prime posyandu UPT Jetis Mojokerto Health Center

Variable	n	%
Age (years)		
< 21	19	16
21-35	95	80
>35	5	4
Education		
Basis	26	22

Variable	n	%
Intermediate	71	60
Tall	22	18
Experience		
< 5 years	31	26
> 5 years	88	74

Table 1 shows that most of the respondents are between the ages of 21 to 35 years old, with more than half of their educational background being secondary education, and most of the health cadres have more than 5 years of experience as health cadres.

Table 2 Knowledge of health cadres of the prime posyandu UPT Jetis Mojokerto Health Center

Knowledge	Before		After	
	n	%	n	%
Good	24	20	113	95
Enough	83	70	6	5
Less	12	10	0	0
p-value = 0.000				

The average increase in maternal knowledge score before the Gerinting Movement was 32.80 (SD=9.768), after the Gerinting Movement the average knowledge score was 87.10 (SD=5.677)

Table 3 Actions of health cadres of the prime posyandu UPT Jetis Mojokerto Health Center

Action	Before		After	
	n	%	n	%
Appropriate	42	35	109	92
Not Suitable	77	65	10	8
p-value = 0.000				

The average action score of mothers before mentoring was 25.83 (SD=19.122), after mentoring in the form of counseling and practicum to cadres, the average action score increased to 79.17 (SD=9.476).

DISCUSSION

Differences in the Knowledge of Health Cadres in Stunting Prevention and Treatment

Based on the results of the study, it was found that the average knowledge of respondents before the implementation of Gerinting innovation was 32.80 (SD=9.768), after the Gerinting movement, the average knowledge score was 87.10 (SD=5.677). Based on the results of the statistical test, a value of 0.000 was obtained, so it can be concluded that the Gerinting intervention was effective in increasing the knowledge of the respondents, which can be seen that there is a significant difference between before and after the implementation of the Gerinting movement.

This research is in line with previous research by Asri Mashita, 2019 that There was an influence of knowledge after the intervention and a picture of food consumption (Arsyati, 2019).

The results of the Systematic Literature Review research also show that education or training on stunting prevention can increase knowledge, either by lecture methods, discussions or with audiovisual media.

Educational activities or health education can affect a person's knowledge because in the process of health education there is an addition of information. After being given health information, a person has a broader insight into the meaning of stunting, its causes and how to prevent it (Mediani et al., 2024). Mother's knowledge can be an indirect cause of stunting in children because mothers play a role in providing food to children (Munir & Audyna, 2022). In addition, health education interventions can help in changing maternal parenting in providing nutrition so that it will later have a good impact on the growth and development of weight in stunted toddlers (Marni & Ratnasari, 2021). Lack of parental knowledge will greatly affect children's

nutritional intake. Therefore, there is a significant relationship between knowledge mothers will stunting with their children's nutritional intake.

Nutrition education is expected to contribute to the awareness of prospective parents about the health of mothers and children at important times in their lives, including breaking the cycle of stunting problems. The success of nutrition education is greatly supported by the media used (Ernawati, 2022).

According to the researcher's assumption, the implementation of Gerinting in preventing stunting plays a role in increasing the knowledge of health cadres, because health cadres receive intensive and routine education so that the information received becomes wider. Therefore, Gerinting's innovation activities must remain maintained to prevent stunting, because this activity has been proven to increase knowledge. With the Gerinting activity, it is hoped that health cadres are ready to be the parents in providing good child care.

Differences in the actions of health cadres in the prevention and handling of stunting

Based on the results of the study, it was found that the average action of respondents before the implementation of Gerinting innovation was 25.83 (SD=19,122), after mentoring in the form of counseling and practicum to cadres, the average action score increased to 79.17 (SD=9,476). Based on the results of the statistical test, a value of 0.000 was obtained, so it can be concluded that the Gerinting intervention is effective in improving the actions of respondents, which can be seen that there is a significant difference between before and after the implementation of the Gerinting movement. The results of the Rista Sewa study, 2019 can be said that stunting prevention measures in experimental group a (counseling) and experimental group b

(counseling and leaflets) are different from stunting prevention measures in the control group that were not given intervention (Purwarini et al., 2012) (Sewa et al., 2019). Action is an attitude that is expressed in the form of real actions based on good and bad assessments which in the future can be accounted for in accordance with one of the forms of attitude levels according to (Notoatmodjo, 2012). Knowledge has a significant influence on cadre practices in the implementation of posyandu (Latif, 2011) and knowledge significantly affects behavior (Eka, 2014). The increase that occurred in this study was caused by several factors, one of which was information obtained from mass media (TV, radio, newspapers, etc.). Mass media is one of the factors that affect human actions because in the delivery of information, mass media contains messages that can influence a person's opinion or opinion (Azwar, 2013) Health cadres have an important role in stunting prevention. The actions of health cadres are vital in stunting prevention, ranging from health education, monitoring child growth, increasing access to nutrition, health promotion, and family empowerment. With these steps, health cadres can play an active role in reducing stunting rates and ensuring that children grow up healthy and develop optimally.

Gerinting is one of the promotive, participatory, collaborative, and collaborative efforts of the local government to the downstream of the village (Naja et al., 2022).

This activity is collaborative and participatory can make the community aware of stunting, especially for mothers-to-be, and with this socialization and education can increase public knowledge about stunting, causes, and consequences of stunting. Suggestions for the next service activities are continuous assistance for other

target participants such as unmarried adolescents or for breastfeeding mothers.

CONCLUSIONS

There are differences in the knowledge and actions of respondents regarding the prevention and handling of stunting before and after the implementation of Gerinting as a simultaneous intervention to prevent stunting in Mojokerto Regency.

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ANALYSIS OF PROVIDING REPRODUCTIVE HEALTH EDUCATION FOR ADOLESCENTS BEFORE MENARCHE IN SUPPORT GROUPS IN MOJOKERTO CITY PRIMARY SCHOOLS

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ABSTRACT	Keywords
Adolescence is a very important period in human life, because it is a transition from childhood to adulthood. Many teenagers experience difficulties in dealing with their first menstruation (menarche) if they have not received the right information from their surrounding support groups, including parents, family members, teachers or their immediate environment. This research aims to analyze the provision of reproductive health education for adolescents approaching menarche in support groups at SDN Mojokerto City. The research method used was pre-experimental. The instrument is a questionnaire to assess knowledge. The sample in this study consisted of 56 parents, 56 students and 28 teachers. The results of this research showed that there was a significant influence on the treatment given to each sample, indicated by a significance value of $0.000 < 0.005$ in the peer support group, and a significance value of $0.000 < 0.005$ in the parent support group, while in the teacher support group significant results show $0.001 < 0.005$. Based on the results, it can be concluded that reproductive health education which is carried out effectively has an impact on increasing knowledge of reproductive health in the three support groups, including peers, parents and teachers.	Reproductive Education Needs, Menarche, Support Group

INTRODUCTION

Adolescence is a very important period in human life, because it is a transition from childhood to adulthood where the initial process of maturation of the reproductive organs in humans occurs, which is called puberty. During this period, both physical and psychological changes occur (Aruni Salsabila, Dara Gustia Amsah,

Nafisah Nadia, Nurainun Rahmadani Simanjuntak, Salsabila Azwita Nasution, Syahmara Qauli, 2024). Adolescence is divided into early adolescence aged 10 - 13 years, middle adolescence aged 14 - 16 years and late adolescence aged 17 - 19 years. (Arnita, 2021). The health that experiences the most changes during adolescence is reproductive health. The peak of puberty is

the first appearance of menstrual blood, which is called menarche (Afifah, 2022).

Many teenagers experience difficulties in facing their first menstruation (menarche) if they have not received the right information from their surrounding support groups, including parents, family members, teachers or their immediate environment (Lestari et al., 2022). Early adolescents who do not receive reproductive health education before menarche will create a risk of psychological disorders due to lack of knowledge. Therefore, teenagers must be equipped with adequate knowledge about reproductive health (Ayu et al., 2015).

Demographic data shows that teenagers constitute a large population of the world's population. According to the World Health Organization (2018), about one-fifth of the world's population at menarche are teenagers aged 12-16 years experiencing a change in the age of menarche. In the United States, around 95% of adolescent women have signs of puberty with menarche at the age of 12 years and an average age of 12.5 years accompanied by physical growth at menarche (Siti Fatima Assehero, 2023). The results of Kemenkes RI (2018), show that based on reports from respondents who have experienced menstruation, the average age of menarche in Indonesia is 13 years (20%) with an earlier occurrence at less than 9 years of age. Nationally, the average age of menarche is 13-14 years, which occurs in 37.5% of Indonesian children and there are also those who are only 8 years old and have started their menstrual cycle, but this number is very small (Azizah Al Ashri Nainar, Naziah Dwi Amalia, 2024).

Reproductive health education is an educational process about the cognitive, emotional, physical and social aspects of reproductive health which requires a process of life skills, namely the ability to adapt and positive behavior that is needed by a person

to overcome the challenges and needs of daily life effectively. The skills required as intended above are included in Healthy Living Skills. To be able to achieve good reproductive health conditions, the implementation of healthy living skills education (PKHS) is very necessary. The skills covered in PKHS are social skills (empathy, effective communication); thinking skills (critical thinking, creative thinking, decision making); emotional skills (coping with stress and controlling emotions) (Tim Direktorat Sekolah Dasar, 2020).

It is hoped that the aim of reproductive health education is not only to increase knowledge which influences attitudes, but furthermore to create motivation to learn more about sexual health through appropriate educational methods (Safitri, 2021). Apart from that, if teenagers do not get enough information regarding sexual behavior from their environment, teenagers generally turn to other sources that are not accurate. Support groups have an important role in providing reproductive health information to adolescents approaching menarche. Support groups include parents, family members, teachers and peers, including strengthening factors that can influence adolescents' readiness to face menarche (Putri et al., 2021).

Based on a preliminary survey, the provision of reproductive health material in the school environment is still not optimal, especially education before menarche. The majority of the material taught is about puberty without explaining in detail the signs of puberty and what needs to be paid attention to during puberty until menarche. The teaching media is still minimal and the lecture method is more common. These schools also do not have extracurricular activities that specifically discuss reproductive health. Meanwhile, from the

results of previous research, it was found that reproductive health information for adolescents was obtained from parents, especially mothers, teachers, sisters and peers.

From this description, researchers are interested in further identifying "Analysis of the provision of reproductive health education for adolescents before menarche in support groups at Mojokerto City Elementary Schools Mojokerto City".

METHOD

This type of research is pre-experimental with a one group pre test - post test design approach without a control group. The research was conducted to analyze the provision of reproductive health education for adolescents approaching menarche in support groups at Mojokerto City Elementary Schools. The independent variable in this research is the provision of reproductive health education to adolescents before menarche. Meanwhile, the dependent variable in this research is knowledge of adolescent reproductive health in the support group.

The sampling method used in this research is purposive sampling, namely a sampling technique carried out with certain aims and objectives determined by the researcher in accordance with the sample criteria (Penelitian et al., 2023) . The sample in this study had inclusion criteria, including; 1) The parent closest to the teenage girl can be the father, mother, or other family who cares for the teenage girl, preferably female; 2) Female teacher at Mojokerto City Elementary School; 3) Female students in grades 4, 5 and 6 at Mojokerto City Elementary School. The sample exclusion criteria in this study were not being present during data collection or not participating in the research intervention.

So the sample size was 56 parents, 56 students, and 28 teachers.

RESULTS

Table 1. The characteristics of respondents (Parents = 56, Students = 56, Teachers = 28).

Characteristics of respondents		f	%
Age Students			
10 years		11	20
11 years		29	52
12 years		16	29
Age Parents			
20-35 years		4	7
36-50 years		44	79
50-65 years		8	14
Age Teacher			
20-35 years		6	21
36-50 years		19	68
50-65 years		3	11
Students Class			
4		13	23
5		32	57
6		11	20
Parenteral Education			
Senior High School	High	29	52
Collage		27	48
Teaching Experience			
		4	14
< 5 Years		11	39
5-10 Years		13	46
>10 Years			

From table 1, the characteristics of the majority of student respondents are 11 years old and in grade 5 of elementary school. The majority of parent respondents were aged 36-50 years with a high school education. Meanwhile, the majority of teacher respondents were aged 36-50 years with more than 10 years of teaching experience.

Table 2. The Test Statistics Wilcoxon

Know- ledge	Pre- Test		Post- Test		(+) Ra nk	Ti es	P- Val ue
	F	%	F	%			
Peer Group/Stundents (n=56)							
Well	0	0	2		56	0	0.0 00
			1	38			
Enough	6	9	2	3			
			5	62			
Not	4	7					
Enough	0	1	0	0			
Parents (n=56)							
Well	6	1	1		45	11	0.0 00
			0	89			
Enough	6	2	4	8			
			6	11			
Not							
Enough	4	7	0	0			
Teachers (n=28)							
Well	6	7	1	5	12	16	0.0 01
			8	10			
Enough	2	3	1	4			
			0	0			
Not							
Enough	0	0	0	0			

Research data from the three groups of respondents were analyzed using the Wilcoxon signed rank test statistic. The statistical test results in table 2 from student respondents show a significance p-value of $0.000 < \alpha 0.05$, parent respondents show a significance value/ sig. (2-tailed) p-value of $0.000 < \alpha 0.05$, and respondents The teacher shows a significance value/ sig. (2-tailed) p-value of $0.001 < \alpha 0.05$, so it can be concluded that H_0 is rejected, which means that there is an influence between providing reproductive health education for adolescents approaching menarche on increasing knowledge in the support group, both in female students, parents/guardians of female students or teachers at Mojokerto City Elementary Schools.

DISCUSSION

Based on table 2, the average level of knowledge of 56 female students/peers before being given health education was that the majority had less knowledge at 71%, and all female students experienced an increase in knowledge after being given health education. Early adolescents aged between 10-12 years are closer to their peers, are egocentric and have a desire for more freedom of expression. The egocentric nature of adolescents makes it difficult for them to adapt and not accept points of view that are different from their own, so that adolescents look for peers to overcome their instability. Adolescents get information about reproductive health from peers at school, especially in urban areas, therefore it is important for peers to have good knowledge so they can provide each other with appropriate input, especially on reproductive health issues (Sari et al., 2021).

In this study, the population of the peer support group taken was all female students in grades 4, 5, and 6 aged 10, 11, and 12. The class was a large class at elementary school level so they were ready to receive information. The findings in this study show that all female students experienced an increase in knowledge with Wilcoxon P-Value test results of 0.000, so it can be concluded that there is an influence of reproductive health education on knowledge in peer support groups.

Through reproductive health education, female students will get correct information about their reproductive health. In health education for female students in the early teenage phase, it is necessary to choose appropriate methods and media. This is intended so that female students can absorb the material provided in health education to the fullest. In this research, health education was provided using a face-to-face method combined with interesting video media using easy-to-understand language. The

increase in knowledge was caused by a learning process by the respondent and occurred due to an increase in the subject's sensitivity or readiness for the test given to the respondent. Knowledge is the result of knowing that occurs after people sense a particular object. Sensing occurs through the senses of sight, hearing, smell and touch (Utami & Fidora, 2021). It is very important to provide reproductive health education at a child's age, because this age is a golden period for forming a strong foundation regarding reproductive health so as to prepare for the transition during adolescence to make wise decisions in life. (Sutjiato, 2022)

In the 56 parent support group, most of the knowledge was sufficient before being given health education at 82%. After being given health education, 45 parents improved, and 11 people remained. One of the factors that influences a person's knowledge is age. The older you get, the more your understanding and thinking patterns will develop, so that the knowledge you gain will get better (Sutjiato, 2022)

Based on table 1 regarding the characteristics of respondents in the parent support group, most of the parents are aged 36-50 years, it can be concluded that the respondents are of a mature age and tend to have good experience, especially in reproductive health. While parental education is from high school to university, this illustrates that parents or guardians of female students easily receive information, especially information related to health, so the level of knowledge about reproductive health before being given health education tends to be sufficient, but parents' knowledge about reproductive health it must be good so that parents can better transfer knowledge to their children. When a mother gives an explanation about something, it is very much determined by the mother's understanding. Mothers who have higher

education are expected to be better able to explain what they know to their children. (Refirman et al., 2018).

The findings in this study show the results of the Wilcoxon P-Value statistical test of 0.000 so it can be concluded that there is an influence of reproductive health education on knowledge in the parent support group. Parents, especially mothers, are the most appropriate people to provide education to their teenage daughters about women's reproductive health.

A mother with high knowledge will be more active in providing information to her child about puberty. So that children understand more about puberty. And the child no longer feels embarrassed or anxious. Mothers with good knowledge will understand in more detail the meaning and what will happen when their children grow up. Parents' views and beliefs will also be greater than when they were children. Sometimes there are even parents who give their children freedom after they are teenagers (Budiati & Apriastuti, 2012).

In the 28 teacher support group, the average knowledge was good before being given health education was 57%. After being given health education, 12 people improved, and 16 people remained in the good category.

The findings in this study show the results of the Wilcoxon P-Value statistical test of 0.001 so it can be concluded that there is an influence of reproductive health education on knowledge in the teacher support group. Law Number 36 of 2009 which mandates that everyone has the right to obtain correct and accountable information, education and counseling regarding reproductive health. Teachers have a crucial role in educating students about reproductive health. It is hoped that good reproductive health knowledge for students can prevent the dangers of promiscuity (Kemendikbud, 2022)

Apart from parents, the role of teachers is also needed in the reproductive health and sexual behavior of students, especially Islamic boarding school students who spend more time with teachers/clerics than with parents. Teachers are considered role models who are able to influence adolescent development and teach values and norms in society (Yurizali et al., 2024)

CONCLUSIONS

This research shows that reproductive health education carried out affectively has a significant impact on support groups. This is proven by the Wilcoxon signed rank test statistic which shows that there is a significant difference between the initial variable (pretest) and the final variable (posttest). The existence of a significant influence on the treatment given to each support group is shown by a significance value of $0.000 < 0.005$ in the peer support group, and a significance value of $0.000 < 0.005$ in the parent support group, while in the teacher support group the significant result shows $0.001 < 0.005$. Based on these results, it can be suggested that collaboration between health workers, schools and other related units to increase knowledge of support groups in adolescent reproductive health education is very important. The implications of this research include the development of cross-sector policies and implementation of health education programs in schools with plans for future experiments to evaluate their effectiveness in increasing adolescent reproductive health knowledge.

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ACTIVE CYCLE OF BREATHING TECHNIQUE (ACBT) AGAINST PEAK EXPIRATORY FLOW IN COPD PATIENT

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ABSTRACT	Keywords
<p>COPD patients often experience the accumulation of secretions in the respiratory tract. To overcome the buildup of secretions in the respiratory tract, the Active Cycle Of Breathing Technique (ACBT) can be applied to the respiratory tract and increase the value of peak expiratory flow. This study aims to determine the effect of active cycle of breathing technique therapy (ACBT) therapy on peak expiratory flow in COPD patients. This research is a Pre-experimental type research that uses a One Group Pretest-Posttest design with the provision of ACBT intervention done 1x on the respondent. Instruments in evaluating lung function lung function of this study using the Peak Flow Meter. The sample in this study amounted to 30 respondents who had been selected through purposive sampling based on inclusion and exclusion criteria by researchers. Data analysis technique data in this study using the Paired T-Test test with the help of the SPSS program. Before being given ACBT intervention, the average value of peak respiration flow was found to be 83.67 lpm and after the ACBT intervention, the average value of peak flow of respiration was found to be 185.00 lpm. The results of statistical test analysis using Paired T-test obtained the results of p-value obtained $0.000 < \alpha 0.05$ then there is a difference in the average value of peak expiratory flow before and after ACBT in patients with Chronic Obstructive Pulmonary Disease. This study concludes that there is a significant effect of the application of the Active Cycle of Breathing Technique (ACBT) intervention on the value of peak respiration flow in COPD patients.</p>	<p>Active Cycle of Breathing Technique, COPD, Peak Expiratory Flow</p>

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is one of the non-communicable diseases that is still a health problem in the world and has a high

mortality rate after heart disease, stroke, cancer, and diabetes mellitus (Adiana & Maha Putra, 2023). COPD is a disease that can be prevented and treated. COPD patients often experience a buildup of secretions in

the respiratory tract. The buildup of secretions in the airways causes a decrease in the peak expiratory flow rate. In an effort to overcome the problem of secretion buildup in the respiratory tract, the Active Cycle Of Breathing Technique (ACBT) can be applied so that it can loosen the airway and increase the value of peak expiratory flow (SHEN et al., 2020).

According to data reported by the World Health Organization (WHO), COPD is still the third cause of death in the world after heart disease, stroke, and COPD which caused the death of 3.23 million people in 2019 (WHO, 2024). Based on research data at Dr. Wahidin Sudirohusodo Mojokerto Hospital in 2023, the number of patients with Chronic Obstructive Pulmonary Disease (COPD) problems is 785 people. A research study conducted by researchers as many as 3 COPD patients complained of shortness of breath, cough experienced by patients with/without sputum production. A total of 3 COPD patients, the average peak expiratory current value is 100 L/minute, indicating an obstruction of the airway.

Smoking is one of the factors causing the occurrence of COPD cases which accounts for 70% of cases and is also followed by the air pollution factor which is a factor in the formation of COPD (WHO, 2024). Until now, the awareness of the Indonesian people about the dangers of smoking is very low, as evidenced by the very high level of cigarette consumption. The high level of cigarette consumption can cause health problems for both active and passive smokers. Health problems due to cigarettes most often occur in the lungs, namely COPD consisting of asthma, bronchitis, emphysema (Pahlawi et al., 2022)

COPD itself is characterized by obstruction in the airway due to difficulty in removing sputum. Sputum buildup in the airways can lead to dyspnea (Hanifah &

Hisni, 2023). COPD patients often experience complaints in the form of shortness of breath, productive cough with sputum, limited activity due to decreased lung capacity. This condition causes the function of the peak expiratory current (APE) to decrease due to disturbances in the movement of air in and out of the alveoli (Zuriati & Suriya, 2020). Lungs that are inflamed by pollutants and cigarettes cause narrowing in the airways. Chronic inflammation often causes fibrotic changes and scarring. When the scar tissue is damaged, the normal elastic lung recoil disappears and the lungs collapse. Collapsed lungs cause hyperinflation and decreased expiratory flow rate (Samuel, 2019).

The need for intervention to reduce shortness of breath so as not to lead to more severe conditions and even death. Efforts are made to reduce shortness of breath in COPD patients, namely by giving pharmacological but non-pharmacological therapy. Pharmacological therapy in COPD patients is the administration of bronchodilators, corticosteroids, and combination inhalation. Meanwhile, non-pharmacological therapy is by giving warm drinks, chest physiotherapy, effective cough, and Active Cycle Of Breathing Technique (ACBT) (Rusminah & Agung P, 2023). ACBT is an active breathing technique to clean the airways, especially in a person with lung disease which is characterized by excessive sputum production that causes obstruction of the airways. In addition, excess sputum buildup causes infection and inflammation of the airways. This ACBT technique can reduce sputum so that it can loosen the airway due to excess sputum accumulation (Pratama, 2021). In addition, this ACBT technique is more effective in helping the process of restoring lung function including the patient's peak expiratory flow (Ardiansyah et al., 2021).

Based on the above problems, the author is interested in researching the effect of the use of active cycle of breathing technique (ACBT) therapy on the peak expiratory flow in COPD patients.

METHOD

This study is a Pre-experimental type of research that uses a One Group Pretest-Posttest design with the provision of ACBT intervention carried out 1x on the respondents. The instrument in evaluating lung function from this study uses the Peak Flow Meter tool which is carried out before and after the application of ACBT therapy. The population of this study was all COPD patients on the first day of treatment in the Jayanegara infectious inpatient room at Wahidin Sudiro Husodo Hospital, Mojokerto City. The sample in this study is 30 respondents who have been selected through a purposive sampling technique based on inclusion criteria and exclusion criteria by the researcher. The inclusion criteria in this study are COPD patients aged 16 years – 45 years, patients with cough complaints and patients with oxygen support devices attached. Meanwhile, the exclusion criteria in this study are patients who have used bronchodilator therapy.

The data analysis technique in this study uses the Paired T-Test with the help of the SPSS program. This research has passed the ethics test and obtained ethical feasibility from the health research ethics commission of the Institute of Science Technology and Health Insan Cendekia Medika Jombang with letter number No.191/KEPK/ITSKES-ICME/IX/2024.

RESULTS

1. Characteristics of Respondents

Table 1. Frequency Distribution Based on Respondent Characteristics

Characteristics of Respondents	Frequency F	%
Age		
16-25	4	13,3
26-35	5	16,7
36-45	21	70,0
Gender		
Male	23	76,3
Female	7	23,1
History of lung disease		
Dyspnea	15	50,0
Emfysema	15	50,0
Smoking History		
Yes	24	80,0
No	6	20,0
Total	30	100,0

Source: Primary Data, 2024

The results of table 1 show that almost all respondents are male as many as 23 respondents (76.3%). The age of the respondents was mostly 36-45 years old, as many as 21 respondents (70.0%). The history of pulmonary disease in some respondents had a history of dyspnea as many as 15 respondents (50.0%) and had a history of emphysema as many as 15 respondents (50.0%). Smoking history was obtained almost all respondents had a smoking history of 24 respondents (80.0%).

2. Peak Expiratory Flow Rate Before Active Cycle of Breathing Technique Therapy

Table 2. Peak Expiratory Flow Rate Before Active Cycle of Breathing Technique Therapy

Variable	Mean	Median	Standard Deviation	Minimum - Maximum	95% CI	
					Lower	Upper
Peak Expiratory Flow Before ACBT	83.67	80.00	22.967	60 - 150	75.09	92.24

Source: Primary Data, 2024

The results from table 2 show that the value of the peak expiratory current before ACBT is obtained with a minimum value of 60 L/min and a maximum value of 150 L/min. The result of the average value of peak respiration current was obtained of 83.67 with a standard deviation value of 22.967.

3. Peak Expiratory Flow Rate After Active Cycle of Breathing Technique Therapy

Table 3. Peak Expiratory Flow Rate After Active Cycle of Breathing Technique Therapy

Variable	Mean	Median	Standard Deviation	Minimum - Maximum	95% CI	
					Lower	Upper
Peak Expiratory Flow After ACBT	185.00	175.00	83.869	100 - 450	154.06	215.94

Source: Primary Data, 2024

The results from table 3 show that the value of the peak expiratory current after ACBT is obtained with a minimum value of 100 L/min and a maximum value of 450 L/min. The result of the average value of peak respiration flow was obtained of 185.00 with a standard deviation value of 83.869.

4. Normality Test

Table 4. Normality Test

<i>Kolmogorov-Smirnov</i>			
Variable	Statistic	df	Sign.
Pretest	1.260	29	0.083
Posttest	1.067	29	0.205

Source: Primary Data, 2024

The results of table 4 show the results of the normality test using the Kolmogorov-Smirnov statistical test which obtained a pretest significance value of 0.083 and posttest of 0.205 so that it can be concluded that the data is normally distributed.

5. Effect of Active Cycle of Breathing Technique on Peak Expiratory Flow

Table 5. Effect of Active Cycle of Breathing Technique on Peak Expiratory Flow

Variable	Mean		diff	95% CI		P Value
	Pre	Post		Lower	Upper	
Expiratory Peak Flow	83.67	185.00	-76.13	-128.557	-74.109	0.000

Source: Primary Data, 2024

The results of table 5 show that the results of the statistical test using the Paired T-Test obtained a value of 95% Confidence Interval at a lower value of -128,557 and an upper value of -74,109, meaning that there is a difference before and after ACBT with a difference value of -7,613. The result of the p-value was $0.000 < \alpha 0.05$, so it can be concluded that there is a difference in the

average value of peak expiratory flow before and after ACBT in patients with Chronic Obstructive Pulmonary Disease.

DISCUSSION

Peak Expiratory Flow Rate Before Active Cycle of Breathing Technique Therapy

The results showed that the value of the peak expiratory flow before the Active Cycle of Breathing Technique (ACBT) was carried out with an average value of 83.67 with a standard deviation value of 22.967. Peak expiratory flow (APE) is the achievement of the highest airflow during the expiratory process and there is a change in the shape, size and volume of the airway that continues to enlarge. This peak expiratory current is used to assess the ventilation capacity of the lungs that depends on the effort to achieve the highest expiratory (Singhal et al., 2022).

Reduction in APE values is often found in patients with Chronic Obstructive Pulmonary Disease (COPD) due to decreased ventilation due to respiratory obstruction that causes lung collapse. Patients with COPD often experience hypoxemia, hypoxia and hypercapnea which cause airflow throughout exhalation to decrease resulting in depression at the peak of expiratory flow (Agreta et al., 2023). In addition, a decrease in peak respiratory flow is often caused by several factors, namely age, and smoking history. The results of the study found that most of the respondents (70.0%) were 36 – 45 years old. Age causes a decrease in the value of PEA, this is because the older the age will experience a decrease in body function, especially the weakening of the function of the respiratory muscles to the occurrence of atrophy which can increase the resistance to the airway so that the maximum expiratory flow decreases (Astuti, 2022).

Another factor that causes a decrease in APE value is a history of

smoking. The results of the study have been obtained that almost all respondents (80.0%) have a history of smoking. The content of cigarettes itself contains addictive substances that are harmful to health whose effects result in heart disease, cancer, lung disease, and other health problems. Frequent exposure to cigarettes increases the risk of hyperlapse or an increase in mucus cells and hypertrophy of mucosal cells in the respiratory tract which causes an increase in inflammatory cells and damage to the alveoli due to pulmonary constriction (Wiraguna et al., 2022). A long history of smoking can cause a decline in lung function. As a result of pathological changes in the lungs due to frequent exposure to cigarettes, it causes narrowing of the airways so that the flow of air into the lungs will decrease. The incoming airflow cannot reach the maximum value so that is what causes a decrease in the value of APE (Slamet et al., 2024).

Based on the presentation of the facts of the research results and the theory above, the researcher assumes that before the Active Cycle of Breathing Technique (ACBT) therapy, the peak expiratory flow in COPD patients decreases. The decreased peak flow of expiratory is due to a lack of oxygen transport to the lungs. There is an increase in the performance of the respiratory muscles when trying to put oxygen into the body is inhibited due to excess sputum making breathing patterns more irregular. So that there is a blockage of sputum in the airway so that the entry of oxygen into the pulmonary ventilation cannot be maximized. In addition, there are several factors that cause a decrease in APE values, including old age due to the decline in organ function, and also a history of smoking that causes inflammation in the lungs and narrowing of the airways so that the air flow into the lungs will decrease.

Ekspirasi Peak Expiratory Flow Rate After Active Cycle of Breathing Technique Therapy

The results showed that the value of the peak expiratory flow after the Active Cycle of Breathing Technique (ACBT) was carried out with an average value of 185.00 with a standard deviation value of 83.869.

Active Cycle of Breathing Technique (ACBT) is a breathing exercise technique used to maintain bronchial cleanliness, reduce the level of inflammation and infection in the lungs and improve lung function by removing secretions. The Active Cycle of Breathing Technique (ACBT) consists of 3 phases, namely breathing control, chest expansion exercises, and forced expiratory exercises (Athawale et al., 2020). The Active Cycle of Breathing Technique (ACBT) is one intervention to reduce the effort required when tightness recurs and aid relaxation with deeper breathing, which can result in improved breathing patterns through decreased breathing rate (Djamiludin et al., 2021).

This Active Cycle of Breathing Technique (ACBT) can increase arterial oxygen and PaCO₂ in 1 experiment. This deep breathing technique in the ACBT cycle can stimulate airflow between secretions in the lungs, facilitate the mobilization of secretions and improve ventilation. ACBT also increases transpulmonary pressure which causes the lungs to expand from the collapsed lung units. The chest expansion technique by holding the breath can increase airflow in the area of obstruction and can improve ventilation. The forced expiration or huffing technique can clear the phlegm in the airways that form obstructions so that it can stimulate the cough reflex. Reduced obstruction due to excess sputum can increase oxygenation to the maximum extent (Syafriningrum & Sumarsono, 2023).

Based on the presentation of the facts of the research results and the theory

above, the researcher assumes that after the Active Cycle of Breathing Technique (ACBT) is performed, the peak flow of expiration increases. The application of ACBT can train tidal volume breathing which functions to reduce dyspnea. This is because ACBT therapy helps in relaxing the airways by removing excess sputum that causes obstruction in the airways. The ACBT technique can be done in 1 trial in removing sputum so that this ACBT therapy can help relieve respiratory symptoms such as shortness of breath, short/heavy breathing in COPD patients that occur due to the accumulation of mucus in the respiratory tract. This ACBT therapy can increase the APE value because oxygen transport to the lungs begins to flow smoothly without any obstacles so that the capacity and ventilation of the lungs are well filled and efforts to achieve expiratory can be maximized.

Effect of ACBT on Peak Respiratory Flow

The results of the study showed that before the Active Cycle of Breathing Technique (ACBT) was given, the average peak respiratory flow (APE) value was 83.67 and after the Active Cycle of Breathing Technique (ACBT) was given, the average increased to 185.00 so that there was an increase from the peak respiratory flow of -7.613. The results of the statistical test using the Paired T-Test obtained a value of 95% Confidence Interval (CI) between a value of -128,557 to a value of -74,109 with a p-value of $0.000 < \alpha 0.05$, so it can be concluded that there is a difference in the average value of peak expiratory flow before and after ACBT in patients with Chronic Obstructive Pulmonary Disease.

This study is in line with research that has been conducted by (Mousa & Abdelaal, 2021) which states that the therapy of Active Cycle of Breathing Technique (ACBT) can increase the value of peak expiratory flow with a significance

value of 0.001 in patients with chronic bronchitis. Another study from (Zhong et al., 2022) also proved that Active Cycle of Breathing Technique (ACBT) therapy can significantly increase peak respiratory flow in the ACBT group compared to the control group without ACBT with an average APE value of 308.7 L/min with a significance value of 0.001 in patients with esophagotomy in reducing complications in the lungs after surgery.

Active Cycle of Breathing Technique (ACBT) therapy is a airway cleaning strategy using breathing aids that aim to improve lung ventilation through a respiratory modification therapy technique that can reduce recurrent respiratory infections and prevent airway damage and strengthen respiratory function (Janani & Saravan, 2024). The administration of Active Cycle of Breathing Technique (ACBT) therapy has been effectively applied to moderate to severe COPD patients in reducing shortness of breath in patients (Cai et al., 2024). Another study from (Gulati et al., 2020) revealed that the application of Active Cycle of Breathing Technique (ACBT) therapy was effective in reducing dyspnea and helping patients in coughing and producing more phlegm in COPD patients.

The Active Cycle of Breathing Technique (ACBT) is performed by controlling breathing, chest expansion to loosen and release secretions to improve ventilation, and huffing to move secretions to upper breathing for immediate expulsion. This action can be repeated (Gulati et al., 2020). The secretion can loosen the airways so that tightness is reduced. This Active Cycle of Breathing Technique (ACBT) therapy can be used in patients with COPD as well as with cardiac surgery patients in restoring the function of the lungs (APE, VEP) which can quickly clear secretions in the respiratory tract (Gulati et al., 2020).

Based on the presentation of the facts of the research results and the theory above, the researcher assumes that Active Cycle of Breathing Technique (ACBT) therapy also increases PEA in COPD patients. The success of Active Cycle of Breathing Technique (ACBT) therapy will cause the peak respiratory flow value to become normal so that it can help the patient in reducing tightness and also expelling phlegm. This Active Cycle of Breathing Technique (ACBT) therapy can be applied as a nursing intervention in the management of airway clearance due to excess sputum through breathing control cycles, chest expansion, and forced expiration. ACBT therapy can reduce complaints of tightness which works by removing excess sputum from the airways so that the increase in oxygen intake is smooth. The entry of oxygen into the airway smoothly can result in an increase in the value of the peak expiratory current so that it can achieve the highest expiratory value.

CONCLUSIONS

The results of this study can be concluded that there is a significant influence in the application of the Active Cycle of Breathing Technique (ACBT) intervention on the value of peak respiratory flow. The results of this study are evidenced by the difference in the average value of peak expiratory flow before and after the Active Cycle of Breathing Technique (ACBT) in patients with Chronic Obstructive Pulmonary Disease. The limitation of this study is that the researcher does not assess the respondents' BMI so that the discussion is limited.

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BANTUSAR WITH THE AHA 2020 GUIDELINE ON THE SKILLS OF HEALTH WORKERS AT LUKAS HOSPITAL BANGKALAN, EAST JAVA, INDONESIA

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ABSTRACT	Keywords
Cardiac arrest is a critical condition that can be life-threatening where the condition of cardiac output is unable to meet the needs of oxygen to the brain and other vital organs suddenly and can return to normal if appropriate action is taken, BANTUSAR with AHA 2020 Guideline is one of the basic training for the skills of health workers in dealing with emergency problems due to trauma and cardiovascular disorders. Handling these problems is intended to provide basic life support so as to save lives and minimise organ damage and disability of sufferers. This research method uses Quasi Experiment Pre-Post Test Design. This research was conducted at Lukas General Hospital Bangkalan Madura, research data collection was carried out on 21 September 2024 with Total Sampling. Respondents in this study were all health workers at Lukas General Hospital Bangkalan, totalling 65 respondents. In the research process, researchers conducted a pre-test on the ability of health workers' skills in BANTUSAR using an observation sheet, then continued by providing an understanding of the latest BANTUSAR through training, and ended with a post-test. The collected data was then analysed using SPSS-10 with the Wilcoxon Signed Rank Test statistical test. The results of the Wilcoxon signed rank test statistical test showed a significance value / Sig. (2-tailed) p-value of $0.000 < \alpha 0.05$ with a Z value (-7.278), it can be concluded that H0 is rejected, which means that there is an influence between BANTUSAR and the AHA 2020 Guideline on the skills of health workers. By providing BANTUSAR training at Lukas Hospital Bangkalan Madura, it can improve the skills of health workers which is expected to be in line with patient satisfaction.	BANTUSAR, health worker skills

INTRODUCTION

Cardiac arrest is a critical condition that can be life-threatening if it does not get good treatment from health workers. (H.S. et al., 2011) Where the condition of cardiac output is not able to meet the oxygen needs of the brain and other vital organs suddenly and can return to normal if the right action is taken, on the contrary, it will result in death and permanent damage if the action is inadequate. According to World Health Organization (WHO) Cardiovascular disease is still the number one cause of death worldwide with 18.6 out of 39.5 million deaths (AHA, 2020). In 2020 in Wuhan, there were reports of 151 people experiencing Inhospital Cardiac Arrest (IHCA) (Perkins & Soar, 2005) in 40 days of observation, and only 136 people were carried out by the RJP. Of the 136 people, only 18 (13.2%) patients managed to achieve the condition Return of Spontaneous Circulation (ROSC) although the RJP can be attempted in less than 1 minute in 89% of cases, and 4 people can survive in 30 days. The majority of patients over 60 years old (80.9%), 66.2% were male, with the most comorbidities being hypertension (30.2%). Respiratory problems (87.5%) were the most common cause of IHCA and only 10 cases with cardiac etiology, 83.1% of cases occurred in ward rooms. From the data obtained, it was concluded that the life expectancy of critical patients with severe covid-19 pneumonia who experienced IHCA in Wuhan was poor (Murphy et al., 2022). And there are reports of outcomes of patients who experience IHCA due to covid-19 in New York City showing a poor prognosis (Liu et al., 2020). Data in Indonesia There is no statistical data on the exact number of cardiac arrest events each year, but the incidence of cardiac arrest in Indonesia ranges from 10 out of 10,000 normal people under the age of 35 and can reach 300,000-350,000 incidents every year

(Tarmizi, 2023). Based on data from the Province and Regency, data on the prevalence of critical illnesses that experience cardiac arrest and receive basic Life Support measures (BANTUSAR) not available.

First aid in cardiac arrest is very necessary and must be done quickly because survival is higher if the victim gets Cardiopulmonary Resuscitation (CPR) (Husein, 2019). Emergency calls and immediate CPR can increase the chance of survival In most cases, it takes a long time from the onset of cardiac arrest and respiratory arrest to arrival at emergency services. In addition to the distance travelled, the patient's prognosis is also affected by the initial management of cardiopulmonary resuscitation.

BANTUSAR with Guideline AHA 2020 is one of the basic training for health workers in dealing with emergency problems due to trauma and cardiovascular disorders. Handling these problems is intended to provide basic life support so as to save lives and minimise organ damage and disability. Health workers as the front line in emergency services must be able to handle problems caused by accidents quickly and accurately. With a nursing and medical care approach that includes biopsychosocial and spiritual aspects. Therefore, health workers are required to be competent in managing emergencies due to trauma and cardiovascular disorders. One of the efforts in increasing this competence is through BANTUSAR training with the AHA 2020 Guideline for Health Worker Skills.

In critical care nursing (Williams, B., Jalilianhasanpour, R., Matin, N., Fricchione, G. L., Sepulcre, J., Keshavan, M. S., ... & Perz, D. L. (2018). Individual differences in corticolimbic structural profiles linked to insecure attachment and coping styles in motor functional ne, 2019)

Health workers, especially nurses, play a role in providing quality care to patients by closely observing the patient's condition, nurses are required to master cardiopulmonary resuscitation skills and respond quickly to patients with cardiac arrest. So that resuscitating nurses must be able to provide the best quality CPR and as early as possible. Quality cardiopulmonary resuscitation is to perform chest compressions at a speed between 100-200x/minute, chest compressions are carried out with a minimum depth of 2 inches (5 cm), allowing full recoil at the end of each compression, minimising interruption pauses, preventing excessive ventilation, compressors are changed every 2 minutes or less than 2 minutes if fatigue is felt earlier, provide adequate ventilation, namely 2 artificial breaths after 30 compressions, each 1x artificial breath is done for more than 1 second and the provision of artificial breath is called perfect if the patient's chest is lifted (AHA, 2020). The impact on the patient if the cardiopulmonary resuscitation measures provided are not of high quality, the patient is not able to achieve ROSC conditions and will certainly increase the mortality rate. For nurses themselves if they successfully perform CPR they will gain confidence in providing further CPR actions because of the experience of previous successes (Rahmawati et al., 2023). The success of cardiopulmonary resuscitation requires good skills that must be possessed by health workers in its implementation sometimes prioritises male health workers who must perform compressions, large nurses who perform compressions, or nurses with new tenure who perform CPR.

In this study, based on the problem-solving approach mentioned above, we need to understand the proper Bantusar technique. Effective education is a key variable in improving the chances of survival from cardiac arrest. Without effective education,

lay rescuers and healthcare providers will struggle to consistently apply the science supporting evidence-based treatment of cardiac arrest. Evidence-based instructional design is critical to improving provider performance and patient-related benefits from cardiac arrest. Key elements of a resuscitation training programme that determine how and when content is delivered. The 2010 AHA Guideline provides recommendations on various instructional design features in resuscitation training and describes how specific provider considerations influence resuscitation education. New and updated recommendations in the field of education will have a significant impact on cardiac arrest mortality.

The AHA 2010 BANTUSAR Guideline (Older version) is Lay rescuers do not need to check for a pulse and should assume that cardiac arrest occurs if an adult individual suddenly collapses or an unresponsive victim is not breathing normally. Healthcare providers should not check for a pulse for more than 10 seconds and, if the rescuer does not feel a pulse within that time frame, the rescuer should initiate chest compressions. The AHA 2020 (Latest) Guideline recommends that lay individuals initiate CPR for suspected cardiac arrest because the risk of harm to the patient is low if the patient is not in cardiac arrest. New evidence suggests that chest compressions on victims when not in cardiac arrest are low risk. Lay rescuers cannot accurately assess whether a casualty has a pulse, and whether withholding CPR from a casualty without a pulse is riskier than unnecessary chest compressions (AHA, 2020). Berdasarkan uraian tersebut perlu dipahami terhadap semua perawat dalam memberikan BANTUSAR Dengan Guideline AHA 2020.

BANTUSAR research with AHA 2020 Guideline towards the skill of health

workers is put forward a problem solving approach as follows; One, Identify knowledge and skills before being given BANTUSAR training with AHA 2020 Guideline. Two, Identify knowledge and skills after being given BANTUSAR training with AHA 2020 Guideline. Three, Analyse BANTUSAR with AHA 2020 Guideline on the skills of health workers before and after training.

METHOD

The BANTUSAR research method with the AHA 2020 Guideline on the skills of health workers uses the Quasi Experiment Pre-Post Test Design research design. This research was conducted at Lukas Bangkalan General Hospital, The research data collection was carried out on 21 September 2024 by means of Total Sampling. Respondents in this study were all nurses at Lukas Bangkalan General Hospital, totalling 65 respondents. In the research process, researchers conducted a pre-test on the ability of health workers' skills in Basic Life Support (BANTUSAR) with the AHA 2020 Guideline using an observation sheet, then continued by providing an understanding of Basic Life Support (BANTUSAR) with the latest AHA 2020 Guideline through BANTUSAR training, and ended with a post test. The data that has been collected is then analysed using SPSS-10 with the Wilcoxon Signed Rank Test statistical test.

RESULT

1. Table 1.1 Frequency Distribution of BANTUSAR Respondent Characteristics with AHA 2020 Guideline on Health Worker Skills

No	Characteristi c	Frequenc y	Percenta ge
1	Gender		
	Man	15	23.1
	Women	50	76.9
		65	100.0

No	Characteristi c	Frequenc y	Percenta ge
2	Age		
	Teenagers: 10-18 Years	0	0
	Adults: 19- 59 Years	65	100
	Elderly: 60 Years and Above	0	0
		65	100.0
3	Last Education		
	D3 Nursing	1	1.5
	S1 Nursing	44	67.7
	D3 Midwifery	20	30.8
		65	100.0
4	Length of Service		
	< 5 Tahun	23	35.4
	≥ 5 Tahun	42	64.6
		65	100.0
5	Ever had BLS training		
	Ever	45	69.2
	Never	20	30.8
		65	100.0

Sumber: Data Primer

Based on table 1.1 shows that almost all of the respondents are female as many as 50 respondents (76.9%). Based on age, all respondents in the adult age range 19-59 years as many as 65 respondents (100%). As for the characteristics of the last education, most of them have an S1 Nursing Ners education, namely 42 respondents (64.6%). Most of the respondents have worked for more than 5 years, namely 42 respondents (64.4%). And most of the respondents as many as 45 respondents (69.2%) had attended BLS training before.

2. Table 1.2 Frequency Distribution of Health Worker Skill Pre-Post Test BANTUSAR with AHA 2020 Guideline

No	Skill BANTUSAR	Pre Test		Post Test	
		Frequency	Percentage	Frequency	Percentage
1	Less	61	93.8	0	0
2	Simpl	4	6.2	18	27.7
3	Good	0	0	47	72.3
		65	100.0	65	100.0
Pre-Post Test Wilcoxon Signed Rank Test					
	Z value	-7.278			
	Asym p. Sig. (2-tailed)	.000			

Sumber: Data Primer

Based on table 1.2 that almost all of the respondents, namely 61 respondents (93.8%) have BANTUSAR skills are still lacking at the Pre Test stage. Whereas in the post-test hold, most of the respondents as many as 47 respondents (72.3%) were able to achieve bantusar skills in the Good category. The results of the Wilcoxon signed rank test statistical test showed a significance value / Sig. (2-tailed) p-value of $0.000 < \alpha 0.05$ with a Z value (-7.278), it can be concluded that H_0 is rejected, which means that there is an influence between Bantusar with the AHA 2020 Guideline on the skills of health workers.

DISCUSSION

Sudden cardiac arrest is one of the most common causes of death in the world. It is usually an emergency situation that occurs in a hospital setting with the highest risk of death. Medical professionals report that victims of cardiac arrest have a high survival rate without nerve damage if first aid is administered within 3-5 minutes of the incident (Ganfure et al., 2018; Kleinman et

al., 2018). To provide immediate care, knowledge and skills of CPR are essential to prevent and save the patient's life, so there is a need for health workers who have good attitudes and adequate skills to provide high-quality CPR (Dwitanta & Yusuf, 2023).

The BANTUSAR programme conducted by the researchers included both theoretical and practical components. These basic skills in health workers are influenced by many factors such as theoretical training provided during education, length of service, training, personal experience, and clinical observation. In addition, the use of up-to-date education and training methods that are based on evidence-based practice is very important in terms of outcomes (Kose et al., 2020). This study was conducted to evaluate the effect of BANTUSAR training on health workers' skills. Health workers' skills on BANTUSAR were assessed using an observation form. In this study, the study revealed that the skills of health workers before being given training were still inadequate. Based on table 1.2 that almost all of the respondents, namely 61 respondents (93.8%) have BANTUSAR skills are still lacking at the Pre Test stage. While at the post test stage, most of the respondents as many as 47 respondents (72.3%) were able to achieve bantusar skills in the Good category. The results of the Wilcoxon signed rank test statistical test showed a significance value / Sig. (2-tailed) p-value of $0.000 < \alpha 0.05$ with a Z value (-7.278).

In accordance with research (Hernando, 2016) The study on the effect of BLS training on the level of readiness to perform CPR showed an increase in the level of readiness to perform CPR after BLS training with a p value of $0.000 < 0.05$. Supported also by research that has been done by Fitriyah et al., 2022; Palele et al., (2022);

Razak et al., (2022) It is believed that the increased level of knowledge possessed by nurses is able to improve nursing care services better. This better service is possible because nurses who have better knowledge of emergency management will be able to act better when these conditions occur, even in undesirable situations. Nurses' understanding of emergency conditions that occur will directly be perceived by patients as a swift treatment (Prawesti et al., 2019). Information obtained by a person can affect their lives, which will lead to changes or increases in knowledge. The more information, the more knowledge is gained.

According to Ivancevich (2008) Training is defined as an attempt to increase knowledge, change behaviour and develop skills. Therefore, BLS training can improve the skills and knowledge of respondents and influence their attitude or desire to do something. BLS is considered a basic skill for nurses (Parajulee & Selvaraj, 2011). Meanwhile, according to the American Heart Association, Basic Life Support can be done by anyone, not necessarily health workers. BHD skills are important because they teach the basic techniques of rescuing victims.

Training is a short-term educational process that brings together theoretical and practical learning, so training is a factor that can increase a person's knowledge. (Larasati, 2018). Training can significantly affect knowledge because it has supporting factors. One of the factors that makes training with simulation methods can increase knowledge is because participants are guided directly by trainers who already have Training of Trainers (TOT) certificates. This is in line with research (Doni et al., 2024) who stated that training with feedback trainers can immediately provide corrections and instructions if the procedure is not

correct. In addition, participants can directly ask questions, so that participants will understand more in the training process. Training is a learning concept that focuses on skills. Training forms the basis of the implementation of one's skills. Training should be an ongoing thing with the aim of remembering and updating the knowledge and skills possessed.

Another factor that made respondents' skills improve significantly was the use of phantoms as teaching aids. Based on research conducted by Andita (2016) in (Nirmalasari & Winarti, 2020) In this study, we examined the effect of health education with slide media and mock objects on changes in knowledge, and found that the use of mock tools (phantoms) can improve a person's knowledge and skills. The use of props can make respondents feel as if they are helping real victims. In addition, by using props, more senses will be used so that more information and skills will be obtained. However, the role of the trainer is still very dominant because the phantom is only a means for skill demonstration. Skills can be moulded through training through various media. The more media used, the higher the quality of skills and knowledge retention.

Factors that can also affect the ability of BANTUSAR skills based on table 1.1 are; (1) The latest education, most participants have a bachelor's degree in nursing totalling 44 respondents (67.7%), but there are 20 respondents (30.8%) who have a D3 Midwifery education. The assumption of researchers is that health workers with D3 Midwifery background have never attended BTCLS training even though a person's education is needed in carrying out an action. Education is developed to produce graduates who have professional attitudes, knowledge and skills in order to carry out their roles and functions as

professional nurses/ midwives /medical personnel. Hospital health workers are required to provide good behaviour in order to assist patients in achieving recovery. A high education of a health worker will provide optimal health services. For a health worker when carrying out his profession must have knowledge and education in certain fields, for this reason, appropriate education is needed so that it can run well and professionally. In this study, the higher a person's education, the better a person's action will be. (2) The length of work factor can also affect BANTUSAR skills, which shows that most of the respondents have been working for more than 5 years, namely 42 respondents (64.4%), and (3) have attended BLS training, 45 respondents (69.2%) but there are still 20 respondents (30.8%) who have never attended BLS. The researcher assumes that those who have attended BLS have experience with BLS or BANTUSAR. In general, health workers with longer work experience have good experience and make these individuals more mature in doing their work. And with high work experience nurses have an advantage in several ways that are useful in developing expertise (Hutabarat, 2022). The tenure of health workers determines the quality in the room. health workers who have a new tenure. then the experience is still limited compared to health workers who have been in the room for a long time. The length of service of health workers who have long had more abilities, which can be obtained in the room for several years since working in the hospital, so that the health worker has moved around the room and from there the health worker gets different experiences in each room. health workers who have worked for a long time have good work quality compared to people who have just worked, the longer a person's working period, the more skilled and experienced they will be in dealing with problems in their work. The

length of service of a health worker greatly affects the quality of work of a health worker who works in the room. The longer the health worker works in the hospital, the more experience the nurse gets, so that the health worker has good work quality. In this study, the understanding of health workers who have worked at the hospital for a long time is very different from the understanding of people who have just worked at the hospital. In essence, health workers who have worked for a long time have a mature mindset, have a good attitude, and have good work quality.

Based on the results of the study and the description above, there is an influence between BANTUSAR and the AHA 2020 Guideline on the skills of health workers with a positive direction. So that the provision of BANTUSAR training at Lukas Hospital Bangkalan Madura can improve the ability of nurses which is expected to be in line with patient satisfaction.

CONCLUSIONS

The results of the conclusion in this study can be conveyed that there is an effect of BANTUSAR training with the AHA 2020 Guideline on the skills of health workers at Lukas General Hospital Bangkalan Madura. This shows that BANTUSAR training can improve knowledge and skills. Based on the results of the research conducted, there are several things that can be recommended, namely this research can be the basis for the importance of providing BANTUSAR training with the AHA 2020 Guideline on the skills of health workers to improve knowledge and skills in basic life support skills. Furthermore, it is hoped that experimental research can be carried out using a larger sample, as well as using a control group to see the effect of training on knowledge and skills and also to examine confounding variables that have a

relationship with knowledge and skills. Furthermore, hospital institutions should have scheduled training programmes related to Basic Life Support (BHD) training on an ongoing basis.

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