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The Effectiveness of Lavender Aromatherapy on Blood Pressure among Elderly with Essential Hypertension

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ABSTRACT

Background: Hypertension is a condition in which the systolic blood pressure is more than 120 mmHg, and the diastolic pressure is more than 80 mmHg. Lavender aromatherapy is a way to cure sickness which uses essential oil.

Purpose: The purpose of this study is to analyse the effect of lavender aromatherapy on the changes in blood pressure in the Elderly with essential hypertension

Methods: This study used a pra-experiment pretest and posttest design where the measurement of blood pressure is done twice before the lavender aromatherapy is given (pretest) and after the lavender aromatherapy is given (posttest). The population of this study is the patients with essential hypertension in the work area of one of the Public Health Centers in Jambi, Indonesia in 2018 which is 627 patients. Meanwhile, the sample used in this study is Purposive Sampling. The method used in this study is univariate and bivariate data analysis using T-Test.

Results: Statistical test result shows that there was a significant effect of giving lavender aromatherapy on changes in blood pressure of patients with essential hypertension with $p < 0.05$; systole ($p = 0.001$) and diastole ($p < 0.001$).

Conclusions: The use of alternative lavender aromatherapy as a therapy used to lower blood pressure in patients with essential hypertension. It is suggested to researchers who are interested to examine this topic of the effect of lavender aromatherapy on blood pressure in patients with essential hypertension to do further research in the same scope with a different variable.

Keywords: blood pressure; elderly; lavender aromatherapy

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INTRODUCTION

Almost in every country, hypertension is ranked as the most frequently encountered disease. World Health Organization (WHO) data shows that there are almost one billion people is diagnosed with hypertension globally, this number is estimated to increase by 50% in 2025. From one billion patients, 33.3% of patients are in developed countries. Meanwhile, the other 66.7% is in developing countries including Indonesia (Kusyati et al., 2018). There is 21% of hypertension patients in Indonesia and

mostly are undetected. According to [Riskesdas \(2018\)](#), the prevalence of hypertension based on doctor diagnosis for people under 18 years old in Jambi province is ranked 22 out of 33 provinces in Indonesia with a prevalence of less than 6.5%.

Hypertension is a condition in which the systolic blood pressure is more than 120 mmHg, and the diastolic pressure is more than 80 mmHg. Hypertension often caused a change in blood pressure which resulted in much higher blood pressure. The initial treatment for hypertension is critical because it could prevent complications on other organs such as the heart, kidney, and brain ([Muttaqin, 2008](#)). Hypertension could be divided into three types based on its causes which are essential hypertension which the cause is not known, secondary hypertension which is caused by another disease, and primary hypertension which is found in 90% of patients, while the rest 10% is caused by secondary hypertension ([Padila, 2013](#)). The prolonged and immediate effects of hypertension need to be treated thoroughly comprehensive. Hypertension caused a high number of morbidity and mortality. Hypertension is the highest cause of mortality in the world with 7.1 million people or 13% of total mortality. The prevalence in developed and developing countries is almost the same size as each other. The development of hypertension is slow but has dangerous potential ([Herliawati & Ramadhani, 2014](#)).

There are two ways hypertension could be treated which are pharmacology and non-pharmacology. Pharmacology treatment is a treatment that used medicine such as diuretic, beta-blocker, central sympatholytic, alfa-blocker, arteries vasodilator, calcium canal blocker, Angiotensin-converting enzyme (ACE) inhibitor, and antagonist receptor type I angiotensin II. Besides that, there is also alternative treatment (non-pharmacology treatment) which includes 1) acupressure (needleless acupuncture), 2) Chinese herbal medicine, 3) juice therapy, 4) herbal therapy, 5) massage, 6) yoga, 7) lavender aromatherapy, 9) respiration and relaxation, 9) mind and body treatment, biofeedback or meditation, hypnosis, and 10) home care ([Adhistya et al., 2013](#)).

Lavender aromatherapy is a way to cure sickness which uses essential oil. Lavender aromatherapy works not only by affecting physically but also emotionally. The benefit of lavender aromatherapy is reducing anxiety, joint pain, high blood pressure, heart frequency,

metabolic rate, insomnia, stress, and increased melatonin and serotonin. Aromatherapy could soothe people physically, mentally, and spiritually, creating a peaceful ambience, and holding off anxiety ([Jaelani, 2017](#)). The efficacy of each aromatherapy needs to be considered in choosing the type of aromatherapy that will be used in massage. Lavender essential oil the widely used in massage because of its content that has aldehyde which is only 2% irritative and non-toxic. The Lavender flower works smoothly on skin and gives a therapeutical effect ([Price & Price, 2011](#); [Koesoemardiyah, 2012](#)).

Based on the study done by [Herliawati & Ramadhani. \(2014\)](#), shows that from 3 respondents (33,3%) diagnosed with severe hypertension, 4 respondents (45%) with mild hypertension, and 2 respondents (22,2%) with moderate hypertension. Lavender essential oil is one of the safest oils which has strong anti-septic power, anti-virus, and mosquitoes' repellent. Therefore, it is widely used to treat infection in the lung, spine, vagina, skin, ease muscle pain, headache, and is used online due to its power to accelerate the healing of skin cells which burned because of sunlight or wound. Having a massage or taking bath using lavender essential oil is used to increase immunity because of its rich efficacy. Lavender essential oil is one of the most popular essential oil in aromatherapy ([Koesoemardiyah, 2012](#)).

Based on the study done by [Soraya \(2014\)](#), is known that the average systolic and diastolic pressure before lavender aromatherapy is given is 154.55 mmHg and 95 mmHg. Meanwhile, the average systolic and diastolic pressure after the treatment is given is 128.89 mmHg and 85 mmHg with a p-value of 0.004. The study that is done by [Septianty \(2015\)](#), mentioned that the average systolic pressure before the treatment is given is 147.63 mmHg, while after the treatment is given the number is reduced to 135.25 mmHg. On the other hand, the average diastolic pressure before lavender aromatherapy is given is 93.19 mmHg and 83.00 mmHg after the treatment is done with a p-value of 0.000. Based on the explanation mentioned above, a researcher interested in studying the effectiveness of lavender aromatherapy on blood pressure among elderly with essential hypertension aim to understand the effect of lavender aromatherapy on the changes of blood pressure on essential hypertension patients.

METHODS

Design

This research was quantitative research using a pra-experiment pretest-posttest design where the blood pressure is measured twice which is before the lavender aromatherapy is given (pre-test) and after the lavender aromatherapy is given (post-test).

Sample and Setting

The population of this study is the total amount of hypertension patients in the Public Health Center in Jambi, Indonesia in 2018 which is 627 patients, while the sample of this study is the essential hypertension patients which are 15 patients. With the sample used in this study is Purposive Sampling. The inclusion criteria in this study were Willing to be a research respondent, Can communicate verbally, No complications from other diseases, No impaired sense of smell, No drug consumption during the research process, Systolic blood pressure 140 and diastolic 90 mmHg, Hypertensive patients with age > 45 year

Variable

The variable in this study is the blood pressure of hypertension patients. The dependent variable in this study was blood pressure and the independent variable was lavender aromatherapy

Instruments

In carrying out treatment, lavender aromatherapy is carried out with a module guide that has been made by researchers with the help of sources in the form of books on lavender aromatherapy, the equipment used in this study is a digital sphygmomanometer (digital Aneroid Sphignomanometer) which is used to measure the patient's blood pressure before and before performing the procedure. units (mmHg), other equipment used is a steam diffuser, water and lavender aromatherapy in the form of essential oils.

Intervention

In this study, there was a one group pre-test and post-test design, with an intervention in the form of lavender aromatherapy. Performed for 6 days as much as 1 treatment in 1-day visit, carried out for 15 minutes. Other equipment used was a steam diffuser, water and lavender aromatherapy in the form of essential oil as

much as 5-6 drops each time treatment with a distance of 2-3cm, before and after given treatment, all respondents were checked for blood pressure on the first and sixth days which would be recorded on the observation sheet because the blood pressure data obtained before and after treatment would be analyzed univariate and bivariate.

Data analysis

This study used univariate analysis and bivariate analysis was carried out on two variables and was used to prove the existence of a significant relationship between the independent and dependent variables, which was carried out using the T-Test test

Ethical Consideration

This study uses humans as subjects, it must not be contrary to ethics, the purpose of the research must be ethical, meaning that the rights of respondents must be protected. In this study, the steps taken after obtaining the researcher's approval were asking permission to explain the purpose and benefits of the researcher and then asking for the willingness of the respondents to participate in the study, ethical issues in this study would be implemented such as research consent sheet, anonymous, confidentiality, privacy, fair treatment, self-determination.

RESULTS

Demographic data in this study are based on age, gender and occupation. It can be seen that the gender characteristics of the 15 respondents were 8 respondents (53.3%) with male gender, 7 respondents (46.7%) with the female gender. of the 15 respondents seen from the characteristics of age, as many as 9 respondents aged 45-59 years (60%). Based on 15 respondents viewed from the characteristics of the work, as many as 5 respondents with self-employed jobs (33.33%), 5 respondents with retired jobs (33.33%) and 5 respondents with housewife jobs (33.33%).

Univariate Analysis aims to understand the frequency distribution from each variable that is being studied, which are blood pressure before the therapy is done and after the therapy is done.

Blood Pressure before Lavender

Aromatherapy

According to [Table 1](#), the minimum value,

Table 1. Illustration of Blood Pressure distribution before Lavender Aromatherapy

Variable	Mean	Min	Max	SD	n
Pre-Test Sistole	145.60	140	169	7.944	15
Pre-Test Diastole	92.00	90	100	4.140	15

Table 2. Illustration of Blood Pressure distribution after Lavender Aromatherapy

Variabel	Mean	Min	Max	SD	n
Post-Test Sistole	136,93	120	160	9.004	15
Post-Test Diastole	83,87	80	99	6.081	15

Table 3. Differences in blood pressure before and after the application of lavender aromatherapy

Variable	Pre Test Sistole Post Test Sistole	Pre Test Diastole Post Test Diastole
Z	-3.468a	-3.557 ^a
Asymp. Sig. (2-tailed)	0.001	0.000

maximum value and standard deviation of the patient's systolic blood pressure before being given lavender aromatherapy (pre-test) is 145.60 and the patient's diastolic blood pressure after being given with lavender aromatherapy is 92.00 with the minimum systolic value of 140 and minimum diastolic value of 90, the maximum systolic value of 169 and diastolic maximum value of 100 along with systolic standard deviation of 7.944 and diastolic standard deviation of 4.140.

Blood Pressure after Lavender Aromatherapy

According to [Table 2](#), the minimum value, maximum value and standard deviation of the patient's systolic blood pressure before being given lavender aromatherapy (post-test) is 136.93 and the patient's diastolic blood pressure after being given with lavender aromatherapy (post-test) is 83.87 with the minimum systolic value of 120 and minimum diastolic value of 80, the maximum systolic value of 160 and diastolic maximum value of 99 along with systolic standard deviation of 9.044 and diastolic standard deviation of 6.081.

Differences in blood pressure before and after the application of lavender aromatherapy

[Table 3](#) showed that there are differences in blood pressure before and after the lavender aromatherapy is given. This showed that

lavender aromatherapy gives a positive impact on blood pressure and could be used as an alternative complementary therapy to change blood pressure.

The effects of lavender aromatherapy to changes of blood pressure on Essential Hypertension patients. On the Statistics Test table above, Z values of systole are -3,468, and 3,557 on diastole. On the other hand, the Z Table Value is obtained from Table Z with the alpha of 5% or 0.05 which value is around -1,645 (the negative marks are customized by output from Z Count values). Whereas the Asymp. Sig value (2-tailed) is 0,001 on systole and 0,000 diastole. Because the value of Z Count > Z Table which is systole of -3,468, and diastole of -3,557 > - 1,645 or sug value 0,001 and 0,000 < 0,05 which based on the statistic test, the H0 will be rejected.

DISCUSSION

Blood Pressure before Lavender Aromatherapy

Based on the results of the research that has been done, it is found that the description of blood pressure before Lavender Aromatherapy is carried out, namely the minimum, maximum and standard deviation values of systolic blood pressure in respondents before being given Lavender Aromatherapy (pre-test) is 145.60 and diastolic blood pressure in respondents after being given Lavender Aromatherapy

(post-test) is 92.00. the minimum systolic value is 140 and the minimum diastolic value is 90, the maximum systolic value is 169 and the maximum diastolic value is 100. And the systolic standard deviation is 7,944 and the diastolic standard deviation is 4,140. This result is aligned with [Suviani et al. \(2014\)](#), the study which found that the average value of systolic blood pressure before the therapy given is 161,76 mmHg and 94.44 mmHg for diastolic. After the lavender aromatherapy is given, there is a decrease in average systolic blood pressure which is 149.99 mmHg and average diastolic blood pressure of 85.98 mmHg.

Relaxation is related to the human nervous system which includes sympathetic and parasympathetic nerves. The relaxed condition could stimulate the body to produce a molecule which is usually called nitric oxide (NO), this molecule works on blood vein muscle so that they could reduce the blood pressure ([Baradero et al., 2008](#)). Aromatherapy is one of few traditional medicines that exist until now. This treatment has been going on for generations, so, naturally, the interest and response of the community to this method is increasing overtimes. Even though the method is relatively simple, it has several strengths compared to another method ([Jaelani, 2017](#)). One of the best ways to reduce blood pressure is by relaxation therapy. Studies showed that relaxation therapy that is being done regularly could reduce systolic and diastolic blood pressure, reduce the level of the stress hormone cortisol, reduce anxiety so that the blood pressure will decrease, and the body will function better.

Blood Pressure after Lavender Aromatherapy

Based on the results obtained that the description of blood pressure before being given Lavender Aromatherapy, namely the value of the respondent after being given Lavender Aromatherapy (post-test) was 136.93 and diastolic blood pressure to the respondent after being given Lavender Aromatherapy (post-test) was 83.87. With a minimum systolic value of 120 and a minimum diastolic value of 80, the maximum systolic value is 160 and the maximum diastolic value is 99.

This result is also aligned with [Suviani et al. \(2014\)](#), the study which found that the average value of systolic blood pressure before the therapy given is 161,76 mmHg and 94.44 mmHg

for diastolic. After the lavender aromatherapy is given, there is a decrease in average systolic blood pressure which is 149.99 mmHg and average diastolic blood pressure of 85.98 mmHg. In addition, [Lubis \(2009\)](#) stated that there is a significant decrease in systolic blood pressure value after the lavender aromatherapy is being given, from 4.95 to 4.15.

[Kim & Kwon \(2010\)](#), the study found a significant difference in pulse and blood pressure, primarily in the aromatherapy given experimental group compared with the controlled group that is not being given the aromatherapy. [Adhistya et al. \(2013\)](#), the study said that hypertension has a linear relation with morbidity and mortality of cardiovascular diseases. Aromatherapy is one relaxation technique that could be useful to handle hypertension, one of them is lavender aromatherapy, which could be given a relaxation effect and sedation that could reduce hypertension.

According to the study done by the researcher, blood pressure could be affected by many factors, one of which is lavender aromatherapy application. The results showed a significant decrease in average blood pressure from 147.63 to 135.25 and diastolic value from 93.19 to 83.00. The average age of the respondents was below 50 years old, so it is assumed that primary hypertension that occurs is not yet being complicated. The researcher sees that the application of lavender aromatherapy had a fairly good influence on hypertension patients. Although the application is pretty good, a calm ambience in the surrounding is needed to achieve maximum results by creating a relaxing effect that will also affect the respondent's blood pressure change. Furthermore, the application of lavender therapy did not have any side effects, unlike pharmacological medicines.

Aromatherapy is one of few traditional medicines that exist until now. This treatment has been going on for generations, so, naturally, the interest and response of the community to this method is increasing overtimes. Even though the method is relatively simple, it has several strengths compared to another method ([Jaelani, 2017](#)). Hypertension is defined as persistent blood pressure which sees the systolic pressure above 140 mmHg and diastolic pressure above 90 mmHg. Mild hypertension is where the diastolic pressure is around 95-104 mmHg. Whilst medium hypertension is when the diastolic pressure is between 105

mmHg and 114 mmHg. Severe hypertension is being categorized as a condition that sees diastolic pressure above 115 mmHg or more. This definition is being defined by diastolic pressure because it has a more serious impact compared to systolic (Padila, 2013).

The effect of lavender aromatherapy on blood pressure

The results were obtained by correlation that the value of *Asymp. Sig (2-tailed)* was obtained at 0.001 systoles and 0.000 diastoles. Because *Z count > Z table*, i.e. systolic -3.468, and diastolic -3.557 > -1.645 or sig values of 0.001 and 0.000 < 0.05, then *H0* is rejected. From the research done in table 3, it could be seen that respondent's number 1 did not experience a change in his diastolic blood pressure whereas the systolic blood pressure has. On the other hand, the lowest difference of blood pressure changes happened on respondent number 4 which is only 1 before and after the lavender aromatherapy is given.

According to the study done by Soraya (2014), on lavender aromatherapy effect on blood pressure decrease in elders with hypertension at Kelurahan Siantan Hulu, Pontiak Utara, it is found that the average systolic and diastolic blood pressure before the lavender aromatherapy is being applied is 154.44 mmHg and 95 mmHg respectively. Whilst the average systolic and diastolic blood pressure after the lavender aromatherapy applied is 138.89 mmHg and 85 mmHg respectively, with a *p*-value of 0.004.

Blood pressure is the number of types of blood that is pushed to the arterial wall (blood vessels) when the heart pumped blood throughout the human body. A healthy Adult's Systolic blood pressure is between 90 and 120 millimetres of mercury (mmHg). Diastolic normal blood pressure is between 60 and 80 mmHg (Wade, 2016). Hypertension was a condition when someone experienced an increase in blood vessels above normal that could result in morbidity and mortality. Blood pressure of 140/90 mmHg is based on 2 phases of every heartbeat which is the systolic phase of 140 that shows the phase of blood that is being pumped by the heart and the diastolic phase of 90 which showed returning blood phase to the heart (Triyanto, 2014).

Hypertension treatment is aimed to prevent morbidity and mortality caused by a cardiovascular complication that relates

to achievement and maintenance of blood pressure below 140/90 (Padila, 2013). Hypertension is a condition where the blood pressure is continuously increasing abnormally which is caused by one or more risk factors that did not work properly to maintain normal blood pressure (Andra & Yessie, 2013). Lavender aromatherapy is a method of body or disease treatment that uses essential oil. Lavender aromatherapy could soothe people physically and emotionally. The benefits of lavender aromatherapy include reducing anxiety, joint pain, high blood pressure, heart frequency, metabolic rate, insomnia, stress, and increased melatonin and serotonin. Aromatherapy is a method of therapy that uses evaporating oil or essential oil with a human's olfactory organ (Jaelani, 2017).

The content of lavender aromatherapy triggers olfactory nerve cells and affect the limbic system which results in a relaxed feeling that affects the blood pressure. The administration of lavender aromatherapy for 15 minutes could affect the limbic system and cause a relaxation effect which made the heart works slower in pumping blood throughout the body and lowering the blood pressure of the respondent. The effect of aromatherapy is positive because of its fresh and fragrant scent which triggers human's sensory and caused an effect in organs that resulted in a strong effect on emotion (Jaelani, 2017).

Based on the research result, it could be concluded that there's an effect caused after lavender aromatherapy treatment is given six times to elderly with hypertension. Therefore, it's strongly suggested to people who are diagnosed with hypertension to use this therapy as one intervention because this complementary therapy is very safe and has a positive effect. The aim of hypertension treatment is not only to decrease blood pressure but also so patients could become stronger. Hypertension treatment generally needs to be given for life, hence it's better to do treatment using complementary therapy.

CONCLUSION

Based on the research result explanation, it could be concluded that Statistical test result shows there is a significant effect in blood pressure of patients with essential hypertension after lavender aromatherapy based on the results obtained that there is an effect of giving lavender aromatherapy with blood pressure as

evidenced by $p < 0.05$ with a systolic p -value = 0.001 and a diastolic p -value < 0.000 . It is suggested that Public Health Care in Jambi and other cities or provinces use lavender aromatherapy as an alternative treatment to decrease the blood pressure of patients with essential hypertension. Puskesmas could educate the public regarding lavender aromatherapy.

Declaration of Interest

None

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Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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The Experience among Patients with Bone Fractures during Traditional Massage Therapy (Topu Bara): A Phenomenology Study

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ABSTRACT

Background: In Indonesia, traditional medicine called “Sangkal Putung” has become an alternative treatment for fractures. Broken-bones sufferers at any age, anywhere, and in any case go to “Sangkal Putung” and there is even a public hospital that provides surgical services. Especially in Maluku Province, there is a type of traditional massage therapy treatment called “Topu Bara”.

Purpose: The study aimed to explore the experiences among patients with bone fractures during traditional massage therapy (Topu Bara).

Methods: A phenomenological study that used deep interviews was used from August to September 2021. The participant was taken by purposive sampling, adult aged 25 to 55-years old, and were the second or more of healing series. Data originated from 15 participants. Interviews were recorded, transcribed verbatim, and Collaizi analysis.

Results: The results of the study found 7 themes, including causes of fracture, time events, action taken directly after inside, pain experiences during handling in therapy “Topu Bara”, coping of the patients, pain management, and advice given by healer to other participants.

Conclusions: Most of them stated that safety and comfort were the priority for fracture healing. The concept of culture in the behavioral alteration of fracture healing can have on the participants.

Keywords: fracture; traditional healing; sangkal putung; topu bara; transcultural nursing

INTRODUCTION

Fracture is a crucial problem that is difficult for health professionals to handle. Treatment failure often occurs so it is deemed necessary for proper treatment. Fractures have a high prevalence rate. Common causes of fracture are accidents traffic accidents, work accidents, and other accidents (Nadler et al., 2014). Worldwide, road injuries cause disproportionately more than 1.3 million deaths and many more disabilities each year (Yuniar & Nasution, 2017). Based on studies conducted by (Mirhadi et al., 2013), the average incidence of fractures

associated with traffic accidents was 14.5 and 4.2 per 100,000 people (Sugiharto et al., 2016).

According to the World Health Organization (WHO), India ranks first in the country with the highest number of deaths due to traffic accidents. Meanwhile, Indonesia ranks 5th (Sudayasa et al., 2018). Indonesia is reported to have experienced an increase in the number of traffic accidents by more than 80% (Darmawan, 2013). In Indonesia, the death toll from traffic accidents reaches 120 people per day (Akhrani & Ardyaningrum, 2019). The prevalence of injury by province from 2007-2018 increased gradually with all age categories including in 2007 around ((Arie, 2017)7.5%), increased in 2013 to (8.2%), and lastly in 2018 increased to (9.2%) (Roma, 2013). Injury events can occur anywhere, such as on roads, homes, neighborhoods, schools, or workplaces (Mirhadi et al., 2013). Traffic accidents according to 35 provinces and the highest characteristics are in the North Sulawesi region (3.5%), and Maluku itself ranks 30th (2.0%) (Kemenkes RI, 2018).

Fractures are indirectly treated by medical treatment. However, this is not following the reality in society (Agarwal-harding et al., 2015). Most people prefer alternative medicine, where they believe that massage therapy (topu bara) can solve the fracture problem in patients without surgery or plate placement. Massage is an effort to relax the stiff part of the muscle because it has not been moved for a long time before exercise therapy (Kautsar, 2018). The proportion of utilization of traditional health services in Indonesia is 31.4 percentile, and in the Maluku area is 14.5 percentile (Kemenkes RI, 2018). While topu bara therapy is a typical name from the Maluku region which is one of the traditional therapies for patients with fracture problems, in the Java area it calls it a denial putting therapy (Maelissa et al., 2020).

In Indonesia, Sangkal putung therapy is still widely used in the community, this is supported by research in Central Java that people prefer to seek treatment for alternative treatments of Sangkal Putung compared to modern hospitals that are easily accessible, have advanced developments in orthopedic and radiological surgery (Kautsar, 2018). Based on the results of interviews conducted by researchers in February 2021, data from 3 participants showed that the reasons for participants who had experienced fractures and undergo massage therapy (topu bara) were due to the fast healing process, saturation and ineffective medical services, information related to this treatment

was obtained from relatives/family. Based on the results of the interview, the researcher wanted to explore the experiences of fracture patients who underwent traditional massage therapy (topu bara) in Maluku Province.

METHODS

Design

We used is a phenomenological study using in-depth interviews. This methodology allowed researchers to explore the phenomenon (Yuniar & Nasution, 2017) of fracture sufferers who decided to go to Traditional massage (Topu Bara) for fracture healing. These can be identified through clinical nursing problems and asking researchable questions (Suarilah et al., 2017). Likewise, (Sudayasa et al., 2018) suggest that self-interest can be the driving force needed to formulate research questions. To some extent, the practitioner then needs to identify and develop an interest in potential changes in practice problems, which are usually stimulated by patient preferences and dissatisfaction, quality improvement data, practitioner inquiries, evaluation data, or new research data (Mulyono, 2017).

Participants and Setting

For this study, participants were taken by purposive sampling. The inclusion criteria in this study included: Adults aged 25 to 55 years and ranked second or more in the series of healing visits. Exclusion criteria, namely: Those who do not have a history of fractures with a history of treatment at "Topu Bara". Data comes from 15 participants, recorded interviews, transcribed verbatim, and Collaizi analyzed.

Ethical Consideration

All of the participants gave their informed consent to be involved in this study. This study has been registered and it passed the research ethics committee of Health Research Ethics Commission of the Faculty of Nursing, STIKes Maluku Husada with letter number RK. 089/KEPK/STIK/VIII/2021.

Data Collection

Participants were interviewed in "Topu Bara" while waiting for recovery and at home for 1 month. Before starting the interview, the researcher tried with two administrative staff of "Topu Bara" to get general information and have a link that connects with the researcher.

By remembering the information and taking notes, the researcher then approached the “Topu Bara” patients to meet the target participants. After the meeting, the researcher then explained the aims and objectives of the research. Patient authority is prioritized. Patients who verbally agreed to participate in the study then consented to their legally confirmed participation as participants. Therefore, data collection with interviews conducted individually; several times depending on the needs of participants and has reached data saturation. All data taken from the interviews were recorded, transcribed, and validated by double-checking the participants. Thus, valid data are then analyzed.

Data Analysis

The data analysis method was adopted from Collaizi (1978) (Maelissa et al., 2020) as written below: Describing the phenomenon under study through trying to understand the phenomenon of the patient's experience. As well as coping strategies they adopt through the study of literature. In addition, researchers were trying to dive in and immerse themselves in a state of participant's experience taking alternative healing at “Topu Bara”. Transcribing data interviews to be able to describe the experience of patients with fractures who came to “Topu Bara”. Thus, collecting descriptions of the phenomenon through the opinion of participants. Reading those data two to three times thoroughly until able to understand the experience of patients. Additionally, read the entire description of the phenomena that have been submitted by participants. Understanding the experiences of the participants, it then continued to read the entire transcript of the interview and select statements are significant and following the particular goals for analysis. Signify typed data by re-read the statement and trying to find keywords that are the core of the statement. Studied every keyword then grouped them into categories. This followed by re-read the entire existing category, comparing and looking for similarities between these categories, and eventually grouping similar categories into themes. Passed through to the theme found over the data and wrote it into a description of the relevant experience of participants. Went back to the participants and asked participants to read the description of the study. This was done to determine whether the description that had been developed by researchers following the state of respondent's

experience. Analyzed data that has been obtained during validation to the participants, and put it in the final description to enable the readers to recognize the experience of participants as they perceived during the fracture healing process at “Topu Bara”.

Trustworthiness

Analyzed data that has been obtained during validation to the participants, and put it in the final description to enable the readers to recognize the experience of participants as they perceived during the fracture healing process at Topu Bara.

RESULTS

The participants of this research are described in Table 1. They are in the second and more visit to traditional massage therapy (topu bara) in Maluku Province. There are 7 themes identified from the results of qualitative data analysis collected through in-depth interviews, namely:

Theme 1: Causes of Fracture

Almost half of the participants had fractures by falls and traffic accidents.

“My father knew well the father of the healer. I was around ten when I fell from Mango's tree and my father took me here and I was satisfied with the result. My leg was normal after that (he exposed her right leg), I had no difficulties. Even though not all my extended family agreed to go to this Topu Bara (for fracture healing, another family member went to another traditional massage), I am sure this one is the most suitable for me”. (Rj, 31-year-old with fractured left ankle).

Theme 2: Time Events

A small part of a participant experienced more than a year. Almost all of them were suffered a closed fracture less than 3 months ago. There was one of the participants experienced a fracture one week ago. Those participants were already getting treatment at the time of the interview was at their third visit. Although each visit always brought positive progress, i.e. the range of motion that extends and pain are reduced, but not denied that the pain was still present when the healer did massage. Overall, all those written above did not deter the participants to stop coming for treatment.

“I broke a bone in my left leg while

Table 1. The Characteristics of Participants

Participants	Age	Sex	Employee Statute	Type of Fracture	Reason
Ab	54	Female	Midwife	Right Hip	Traffic accident
Jd	21	Female	College student	Right knee	Fall
Ds	37	Female	Housewife	Right Carpus	Fall
Da	47	Male	Motorcycle taxis driver	Left Tibia	Traffic accident
Gh	59	Female	Civil servant	Left Clavicle	Traffic accident
Hs	43	Male	Army	Right ankle	Fall
JK	46	Male	Government employees	Lumbar	Fall
Gi	55	Male	Fisherman	Right knee	Fall
Dk	42	Male	Fisherman	Right ankle	Fall
Hn	33	Male	Motorcycle taxis driver	Left Tibia	Traffic accident
Mn	22	Male	College student	Right Tibia	Traffic accident
Rj	31	Male	Nurse	Left ankle	Fall
Hi	46	Male	Fisherman	Left Tibia	Traffic accident
Bd	27	Female	Housewife	Right Hip	Traffic accident
Hi	34	Male	Fisherman	Left Tibia	Traffic accident

working as a motorcycle taxi driver since 3 2 months ago, when I was driving a motorcycle when it hit a tree” (Da, 47-year-old with fractured Left Tibia).

Theme 3: Almost Taken Directly After Inside

Almost no participant went directly to the traditional massage therapy (topu bara) where was interview taken, at the time after the incident for healing. One participant went straight to the other the traditional massage therapy (topu bara). Most headed to the hospital. Less than half of them rushed to the traditional massage therapy (topu bara) after being less satisfied with the handling of service and they got suggestions to the traditional massage therapy (topu bara) precisely by the physician.

“This was not my first experience going to Topu Bara to get treatment for my clavicle; I had gone to another Traditional massage. It seemed I was a Topu Bara’s adventure..hahaha (laugh). I heard too many suggestions so I compared what my friend said and which one was the best based on my personal views. Finally, this Topu Bara helped me much”. (Gh, 59-year-old with fracture left clavicle)

Theme 4: Pain Experiences during Handling in Traditional Massage

Therapy (Topu Bara)

Almost all participants said a similar statement when they began therapy/massage as a part of fracture treatment by healer at the traditional massage therapy (topu bara). Starting from the pain of mild to severe. One participant said that he combined the traditional massage therapy (topu bara) treatment with physiotherapy at one of the state hospitals. This respondent stated very significant progress in the healing process. The pain was present when the message was processed by the healer. However, pain can be reduced to the level of mild pain no longer after the massage is finished.

“That was a magic power or something like that. In my religion (Islam), a selected person may be given by Allah (God) that kind of ability; they were able to cure without medication. I heard the healer always start with prayer before and after doing massage.” (Tn Da, 47year-old, fractured left tibia)

Theme 5: Coping of The Patients

Almost all the participants had positive responses to the treatment they got from traditional massage therapy (topu bara). There were no statements from the respondent that they would stop the treatment process any time when they had no intention to the outcome.

“Three days ago, after she finished (the healer) with massage, she told me that

the bone was joined well. I was very grateful to hear that. I wish (now) she will inform me that the bone conjunctions were strengthening than before. My fracture is more difficult to be healed compared to others (because of that) I was suggested to immobile this knee. At home, my husband and sons help me with my daily needs.” (Gi, 55-year-old, fractured right knee).

Theme 6: Pain Management

Medication such as painkillers oral was suggested by the healer. The healer informed the participant Name of the analgesic oral and topical to buy at the medication store. In addition, the healer was also recommended some multivitamins to support bone union and encourage avoiding certain foods.

“You must know this kind of analgesic? (she showed a blister of analgesic to reduce pain), feel free to ask all patients here (at Topu Bara), they should bring the similar thing.” (Ds, 37-year-old with fracture right Carpus)

“Look! This ointment is burning my skin (showing his right hip). The healer recommended I to have this. I bought it from medicine store. It is limited, so the price was a bit expensive.” (Ab, 54-year-old, fracture right hip)

Theme 7: Advice is Given by Healer to Other Patients

The first participant was advised by the healer to come to a physician first at the very beginning they arrived at traditional massage therapy (topu bara). Participants thought that traditional massage therapy (topu bara) was advisable because it did not only solve the problem of physical but also psychological and or spiritual caused by fracture Almost all of the participants declared that the severity of a fracture should be to a medical first before traditional massage therapy (topu bara).

“Before I went to “Topu Bara” for treatment, I was previously treated at a doctor. But after 2 months of treatment showed no cure. So I was advised by my family to try the treatment at “Topu Bara”. Initially the therapist suggested that you must first believe that the fracture you experienced could heal after undergoing the “Topu Bara” treatment. Not allowed to undergo “Topu Bara” therapy at

other therapists. Before treatment, the therapist first reads a prayer as a healing ritual” (Hs, 43-year-old, Right ankle).

Discussion

Traditional massage therapy (topu bara) as an alternative for fracture healing was recommended by family, relatives, and close friends. No one participant came to traditional massage therapy (topu bara) with her/his initiative. A positive statement from the previous has become a strong motivation to make a final decision regarding fracture healing. The healer as the center of the healing process of fracture at a Topu Bara practiced a supernatural approach through massage which was perceived by participants. They believed that every healer at Topu Bara had that kind of power.

They expressed that during this massage process, participants experience a pain sensation. To reduce pain, the healer recommended the name of painkiller oral and or topical. Although they did not exactly know the series of visits' need to have a bone recovery, all participants said that they want to get well soon so they follow what the healer suggested.

The healer sometimes informed the bone healing process after the massage finished. Everything that comes from the healer during the healing process was perceived positively by participants. Implicit in the results of interviews with sources of hope and advice conveyed such as others suffered the same fracture. Not merely because of lack of funds for treatment to medical treatment (Table 1) as written above, showed that all participants are financially independent, but they come to Topu Bara for various considerations and reasons.

Family, relatives, and close friends who suggested them for Topu Bara treatment were fully attention and follow the result of every visit. Further, during the waiting time for healing, most all participants talked to each other and shared their experiences (Maryam, 2017). Participants perceived that situation was not found in any hospital. This has been stated by (Akhrani & Ardyaningrum, 2019) that perception is the major social aspect so that people are freed from using services of an alternative based on their perspectives. In addition, treatment by a healer at Topu Bara as perceived by the public works, partly states that cost was not relevant. Almost all of the respondents know their suitability and herb

used techniques. Massage techniques and the sequence of respondents believed the herb is very useful in fracture healing.

Additionally, based on the background of participants; demographics, economic, religion and culture, and economic, they vary from middle to high economic level, Moslem, and Maluku Province. Further, even though the coverage of health insurance provided by Indonesia's government was fully funded for any hospital service, it does not replace the existence of Topu Bara.

Generally, participants are believed in the medical services, but they are also searching for an alternative treatment that did not only focus on the problem of physic as they perceived. (Sholihah, 2018) stated that negative perception makes public attitudes towards complementary medicine was also negative. This has been expressed by a participant that Topu Bara healer was able to provide a sense of confidence that they will be recovered. The spiritual characteristic was a basic that bridge the participant's expectation to the bone recovery. This was the less they got when going to the medical service.

Conclusions

It can be concluded that participants put safety and comfort on the priority when they decide to get help for fracture. Pain which is commonly expressed by people with fractures decreased effectively when painkillers combined with safe and comfortable atmosphere work in balance. At Topu Bara along the healing process, people with fractures experienced holistic care that combined multiple approaches of culture, cure, and care. Topu Bara as an alternative for fracture healing has been well developed from generation to generation. The benefits of Topu Bara as an alternative treatment for fractures have been widespread in various ethnic groups and levels of society in Indonesia. This research was conducted in Maluku Province as a reference for health services for Eastern Indonesia. Further studies are needed to be explored taking into account cultural values and ethical practices.

Declaration of Interest

None

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Data Availability

None

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The Implementation of Inspiratory Muscle Training to Enhance Weaning from Mechanical Ventilation: A Systematic Literature Review

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ABSTRACT

Background: Mechanical ventilation is very important for the world of critical care. However, the use of mechanical ventilation also affected respiratory muscle weakness.

Objective: The purpose of this study was to identify the implementation of Inspiratory muscle training for weaning mechanical ventilation in patients with mechanical ventilation in the Intensive Care Unit.

Design: A systematic literature review study design was used.

Data Sources: The databases used are CINAHL, PubMed, MEDLINE, Sage Journal, and ScienceDirect.

Review Methods: Articles published from 2009-2020 with the type of randomized research-controlled trial (RCT) in English. The keywords "Inspiratory Muscle Exercise", "Inspiratory Muscle Training", "weaning", "mechanically ventilated", "critical care", and "intensive care".

Results: From four articles analyzed, we found an effect of inspiratory muscle training on ventilator weaning, which was carried out on therapy five times a week, and some were carried out for seven days for two weeks and increased respiratory muscle strength.

Conclusion: Inspiratory muscle training in mechanically ventilated patients is a nursing intervention that requires evidence-based preparation of guidelines to provide best practice. The optimization of inspiratory muscles exercise can help the weaning process and be implemented further.

Keywords: inspiratory muscle training; weaning; ventilator; intensive care unit

INTRODUCTION

Mechanical ventilation plays an important role in the world of critical care. The role of mechanical ventilation can be used as a substitute for ventilation in patients with lung disorders (Giusti et al., 2021; Gupte et al., 2022). However, mechanical ventilation can also cause respiratory muscle weakness among patients in the intensive care unit (ICU) (Walsh et al., 2021). With the use of controlled mechanical ventilation for 18-69 hours, there will be disturbances in the diaphragm proteolysis occurs atrophy and respiratory muscle weakness (Bissett et al., 2016).

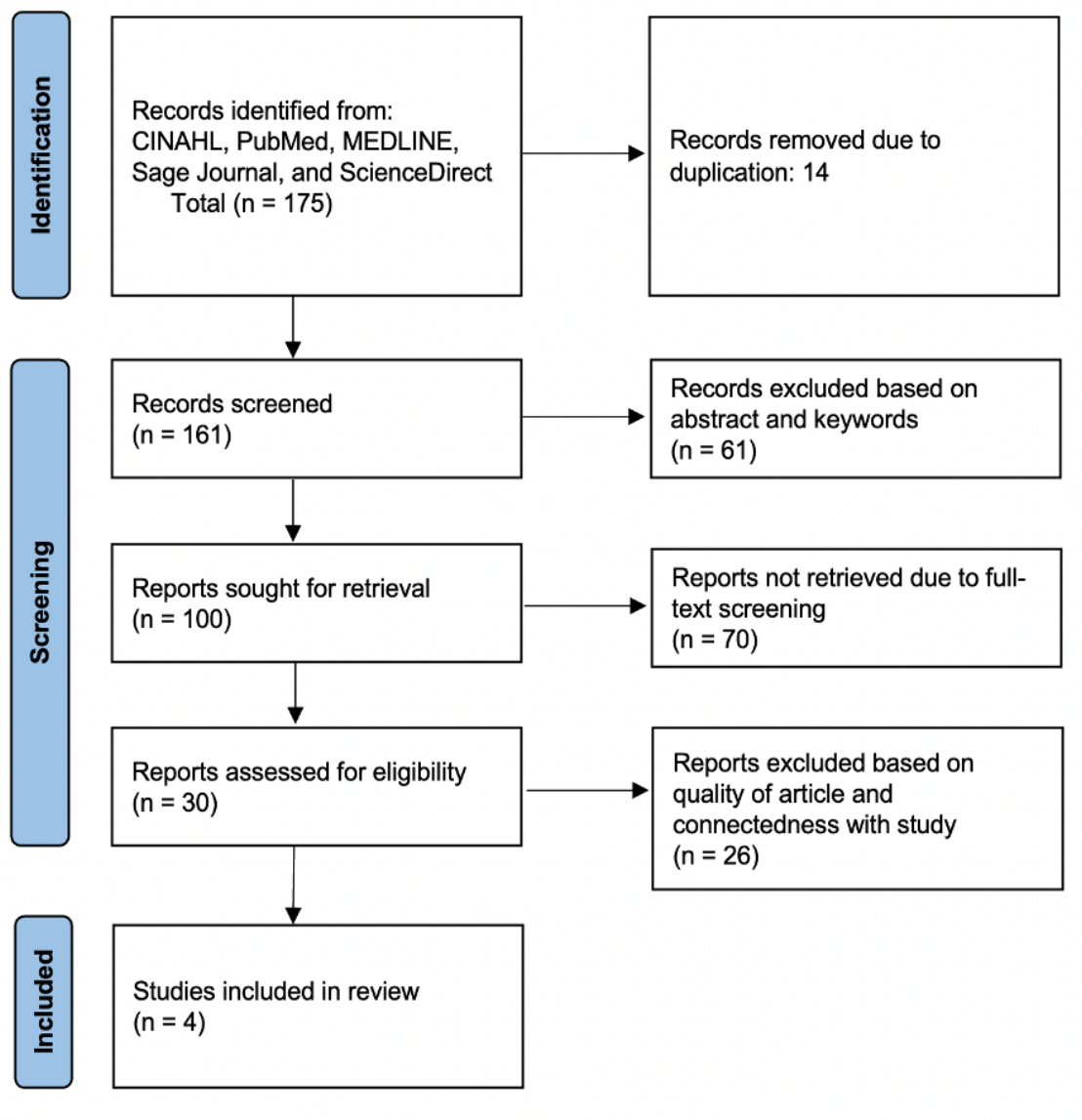


Figure 1. Article Search Strategy

The weakness of the respiratory muscles can contribute to the occurrence of persistent dyspnoea, where the residual physical function disorder will worsen the condition. In addition, if patients use mechanical ventilation, then proteolysis of skeletal muscles and diaphragm occurs, complicating the weaning process (Chiu et al., 2020; Spiesshoefer et al., 2020). The previous studies showed that in patients with ventilators used the strength of the diaphragm significantly affected the process of weaning the patient to breathe independently after the escape of a mechanical ventilator (Bissett et al., 2016). Besides that, the respiratory muscles can be returned to their optimum in several ways, such as by giving an inspiration load and respiratory muscles independent of

mechanical ventilation (Condessa et al., 2013).

In restoring the respiratory muscle strength, the patient needs to be prepared for the weaning process and not depend on the ventilator. The previous studies related to the implementation of Inspiratory Muscle Training is not reported well. Thus, this literature review can provide new information about inspiratory muscle training to improve the weaning process. In addition, this literature review can provide new insight among nurses and other healthcare teams. Thus, the purpose of this study was to identify the implementation of Inspiratory muscle training for weaning mechanical ventilation in patients with mechanical ventilation in the Intensive Care Unit.

METHODS

Study Design

The study design was a systematic literature review.

Search Methods

This literature study was compiled from studies published online. A PRISMA methods was used. The search was conducted in June 2020, with the search criteria covering articles published in English and published from 2009-2020. The databases used are CINAHL, PubMed, MEDLINE, Sage Journal, and ScienceDirect with the keywords “Inspiratory Muscle Exercise”, “Inspiratory Muscle Training”, “Weaning”, “mechanically ventilated”, “critical care”, and “intensive care”. The first identified articles through keywords were 175 articles. Of the 175 articles screened, 165 were excluded from search results because of titles and/or abstracts, such as research designs that were not relevant to the literature review topic. The next check is the feasibility of full-text articles conducted on 30 articles. The results obtained from the selection process are four articles with the type of RCT that will be carried out in the process literature review (Figure 1).

Inclusion and Exclusion Criteria

The inclusion criteria were an article in English, a full paper, and an RCT study design. We eliminated the articles out of inclusion criteria and did not focus on inspiratory muscle training.

Data Extraction

The selection of reviewed articles focused on the type of experimental research, either controlled trial randomized (RCT) or quasi-experimental study. There are still limited RCT studies on Inspiratory muscle training in mechanically ventilated patients in the ICU. Therefore, the selected articles include research on the implementation, comparison, and effectiveness of Inspiratory muscle training on the successful process of ventilator weaning. The review involved adult patients in the ICU who were intubated and mechanically ventilated. The outcome of this review is the effect of Inspiratory muscle training on the success of ventilator weaning.

RESULTS

Database (CHINAHL, PubMed, MEDLINE,

Sage Journal, and ScienceDirect) with the keywords “Inspiratory Muscle Exercise”, “Inspiratory Muscle Training”, “Weaning”, “mechanically ventilated”, “critical care”, and “intensive care”. The first identified articles through keywords were 175 articles. Of the 175 articles screened, 165 were excluded from search results because of titles and/or abstracts, such as research designs that were not relevant to the topic of the literature review. From the article that describes the effectiveness of respiratory muscle training, it was found that there was an effect of respiratory muscle training on ventilator weaning, which was carried out on therapy 5 times a week, and some were carried out for 7 days for 2 weeks, but in other studies there are also which has no effect on weaning time, only inspiratory muscle therapy can increase respiratory muscle strength, where if the respiratory muscles can work optimally it will help the weaning process (Table 1).

DISCUSSION

This literature review consists of articles that have heterogeneity in therapy—respiratory muscle exercise in patients on mechanical ventilation to achieve weaning on mechanical ventilation. The previous study showed that respondents who completed two weeks of IMT had a more significant increase in respiratory muscle strength than those who did not. This is related to the previous study that ventilation mechanics increase in strength within two weeks of IMT (Bissett et al., 2016). The increase in respiratory muscle strength can be caused by the effects of exercise such as IMT and the MIP (Maximal Inspiration Pressure) test manoeuvre (Cabrita et al., 2021; Han et al., 2020; Tanriverdi et al., 2021)

However, atrophy may occur quickly in ICU patients, especially in skeletal muscle and respiratory muscles (Spiesshoefer et al., 2020), if the patient is attached to a mechanical ventilator for more than five days. With an adequate training stimulus, the possibility of atrophy in the respiratory muscles will decrease in a relatively short period of time, so that it will help the ventilator weaning process. IMT can be considered an effective strategy to reverse some of the common inspiratory muscle weakness after prolonged use of mechanical ventilation and improve the quality of life in these patients with only two weeks of training (Hoffman et al., 2018).

Table 1. Summary Article

Authors	Design	Sample	Intervention	Results
(Martin et al., 2011) USA	RCT	A sample of 129 patients admitted to the ICU but who participated in this study 69 patients were divided into two groups, the first 35 patients giving IMST action and 34 patients with SHAM therapy.	Interventions were randomized and through a double-triple blind study. At the start of the study, each group was allowed to perform four sets of 6 to 10 breaths per day, with a two-minute rest. Mechanical ventilation support between each set and instructed to long breathe, slow inspiratory and expiratory efforts during exercise. Furthermore, hemodynamic testing is carried out. If it is still within normal limits, it can be done. This exercise is carried out for five days with 1.5 hours per day.	When compared with sham therapy (An inactive treatment or procedure that is intended to mimic as closely as possible a treatment in a clinical trial), Inspiration Muscle Strength Training (IMST) is more effective in providing respiratory muscle pressure can assist in the ventilator weaning process.
(Condessa et al., 2013) Australia	RCT	The total sample used in this study was 92 patients who were hospitalized ICU. Forty-five patients were in the intervention group and 47 patients to the control group.	The assigned intervention was randomized and through a double-blind study. The experimental group received the usual care and underwent inspiratory muscle training twice daily throughout the weaning period. The control group received the usual care. Before the exercise, all patients had been mechanically ventilated for more than 48 hours in a controlled mode and were considered ready for weaning with supported pressures ventilation between 12 cmH2O and 15 cmH2O and positive end-expiratory pressures between 5 cmH2O and seven cmH2O. They should be hemodynamically stable without the aid of vasoactive drugs (dopamine, dobutamine or norepinephrine) or sedative agents. Each exercise for the intervention group was given a session consisting of 5 sets of 10 breaths, twice a day for seven days a week.	Although the weaning period was on average 8 hours shorter in the experimental group, this difference was not statistically significant (95% CI -16 - 32). Maximum inspiratory and expiratory pressures increased in the experimental group and decreased in the control group, with significant mean differences of 10 cmH2O (95% CI 5 to 15) and eight cmH2O (95% CI 2 to 13), respectively.

Priambodo, A., Mediani, H. S., & Emaliyawati, E. (2022). The Implementation of Inspiratory Muscle Training to Enhance Weaning from Mechanical Ventilation: A Systematic Literature Review. *The Journal of Palembang Nursing Studies*. 1(1): 16-22. <http://dx.doi.org/10.55048/jpns.v1i1.3>

Table 1. Summary Article (Continued)

Authors	Design	Sample	Intervention	Results
(Bissett et al., 2016) Australia	RCT	The total sample in this study was 70 respondents divided into two groups—intervention (34) and control (36)	The intervention was conducted randomly and through a double-blind study. Respondents attached to a ventilator for more than seven days were randomly assigned to respiratory muscle training therapy for five days a week and overall implementation for two weeks.	Receive in early research. It was also found that respiratory muscle exercise was proven to be effective in increasing respiratory muscle strength.
(Hoffman et al., 2018) Australia	RCT	Respondents in this study were 90 patients in the ICU. Intervention (45) and control (45)	The intervention was randomized and through a double-blind study. Furthermore, the intervention group will be given an exercise session consisting of four sets of 6 to 10 breaths per set with a rest period of at least 2 minutes between sets. Patients in the group treatment group will conduct	Research is early also got results that muscle exercises breathing proven effective can increase respiratory muscle strength,

Inspiratory muscle training during the weaning period can increase maximal inspiratory and expiratory pressures and tidal volume, although it does not significantly reduce the weaning period (Bissett et al., 2012; Condessa et al., 2013). For example, inspiratory muscle training was performed by adjusting the ventilator pressure's trigger sensitivity to 20% of the maximal inspiratory pressure and increased for 5 minutes in each session until it reached 30 minutes. After that, the pressure will increase by 10% of the initial maximum inspiratory pressure to a maximum of 40% of the maximum inspiratory pressure (Martin et al., 2011).

Using a threshold device with an initial load of 30% of the maximum inspiratory pressure can increase by 10% every day for 5 minutes (Boswell-Ruys et al., 2020). A threshold device set at the highest tolerable pressure is between 7 and 12 cmH2O (Martin et al., 2011). A previous study showed a maximal inspiratory pressure could be evaluated before each session, and training load was improved at 40% of this value, which equates to an average of 13 cmH2O initially (Condessa et al., 2013). Therefore, the initial load will be higher than in other studies in this area. It may also contribute to the significant increase in maximal inspiratory pressure, roughly the same as the most significant increase seen in other studies (Syabbalo, 1998). However, the weaning period did not differ significantly between the experimental and control groups. Therefore, inspiratory muscle training with a threshold device may be adequate for increasing respiratory muscle strength and tidal volume in patients receiving mechanical ventilation.

CONCLUSION

Inspiratory muscle training in mechanically ventilated patients is an intervention nursing that requires evidence-based preparation of guidelines to provide best practice. Without evidence-based practice, nurses in critical nursing areas will assist patients in the mechanical ventilation weaning process. This study supports that the perception of inspiratory effort and respiratory drive is disproportionate to inspiratory muscle strength and may help explain why increased MIP (Maximal Inspiration Pressure) contributes to weaning.

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Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Learning Perspectives of Publication

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ABSTRACT

The growing demand of scientific-driven results to strengthen nursing profession, researchers should consistently engage in executing knowledge-generating actions. Disseminating research results either through fora or in printed publication deepens understanding on issues particularly on caring and nursing education. But will research endures its aim of offering relevant evidence during pandemic era where conventional data collection strategies are less feasible, hence this viewpoint.

Keywords: caring; education; nursing; research; publication

Neophyte researchers are eyes-focused on publishing to high impact journals. Although this poses no problem, if it prohibits one from disseminating their works, then a new perspective should be considered. Publication's genuine intention is knowledge propagation, endorse critical attention, health and wellbeing (Fortney, 2021) and it has not changed since then. Exploring while attempting to produce ideas through the empirical manner in early phases become vital works in research progression. Findings explaining the phenomenon and putting meaning and new interpretations to research-driven data necessitate the art of publication.

Putting a premium on the work, considering how research results impact fellows, adding credibility every time researchers releases findings are some of-the-many significances to publish. Nursing, chiefly known as an evidence-based profession, demands scientific knowledge. Research similarly plays a critical part in rendering nursing care, transacting empathy (Martiningsih et al., 2021) and reports one's mental health especially in the light of the pandemic across the population (Nugroho et al., 2021). Therefore, the publishing message must cut across the globe; the mark is dissemination, not primarily on the journal.

Since all faculty members want to publish, its mechanisms are not as easy as eating peanuts. Learning disciplines must transpire for an academic institution to prosper in publication. Structuring shared vision primarily must be defined. Assessment in the nursing process speaks similarly whereby institutions

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should understand the commonality of purpose to transform nursing practice and education (Acob, 2019). Where is the organization going in terms of publication endeavors? Each one must contribute commitment to the better changing nursing environment by broadcasting newer knowledge from and into the workplace. The second is demarcating how research findings affect both the organization, consumers of knowledge to grow, change and improve.

By cyclical writing-publishing modes, researchers obtain mastery and a personal sense of satisfaction as this emphasizes pride to better the work while readers adapt and grow in caring. New findings and updated versions of work firm vision or outcome for patient quality care. Collaboration and the climate of shared works are enhanced when one attempts to learn to publish. These systems thinking produce a better future to integrate the complex yet adaptive publication disciplines.

Finally, academic institutions must condition the mindset that research is not only for teachers, more-so for students to love and be involved with. They are conducting quality papers while empowering them about the process to solve day-to-day community issues in a more realizable and meaningful way.

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Nurses Barrier: A Patient Safety Concern in The Intensive Care Unit

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ABSTRACT

Patient safety became one of the most important indicators in maintaining the quality of nursing service in the hospital. Patient, individual staff, team, task and technology, work environment, organizational and management, and institutional context factors are all examples of obstacles nurses encounter when attempting to ensure patient safety in the hospital setting. Lastly, nurses should put concern in patient safety to make sure the quality by considering the behaviour and refer to Laurence Green Theory.

Keywords: patient safety; nurse; intensive care unit; barrier

In the hospitals, patient safety is a significant source of concern. Not just for the hospital's administration but also the healthcare professionals engaged, such as physicians, nurses, and other healthcare professionals. Within the first 48 hours of a patient's admission to the Intensive Care Unit (ICU), predisposing variables contributed to the patient's emergency. In the ICU, the mistake rate is higher because nurses are more focused on patient care and collaborative activities with other medical workers, which causes nursing documentation to be less accurate and efficient. This might happen when nurses are experiencing an increase in their nursing burden, resulting in them making mistakes (Kang et al., 2016). The actions that necessitate nurses to act quickly, making patient identification with bracelets ineffective. As a result, nurses' nursing documentation is not as adequate as possible. Nurse communication (documentation) failures in the intensive care unit can result in mistakes in documentation, insufficient paperwork, and only a small number of patients meeting documentation requirements (Nursalam, 2016).

There are many different types of medications, treatments, and tests available in hospitals and medical equipment that use modern technology. Along with the advancement of research and technology, the complexity of healthcare services supplied by healthcare and non-healthcare personnel is expanding (Thimbleby, 2013). Consequently, unfavourable events can occur if the complexity is not effectively controlled. The nursing staff is the most numerous and longest-interacting human resource with patients. The nursing staff is on call 24 hours

a day, seven days a week, to accompany and monitor patient health constantly and continuously to give comprehensive and professional nursing care. Nurses make many mistakes due to their heavy workload and their combined efforts with other health care professionals. This can result in adverse events that have a negative influence on patient safety. Failure to ensure patient safety correctly and adequately can result in the transmission of infections, medication administration mistakes, and treatments that can result in permanent damage or even death in patients if not done correctly and appropriately. Patient, individual staff, team, task and technology, work environment, organizational and management, and institutional context factors are all examples of obstacles nurses encounter when attempting to ensure patient safety in the hospital setting (Ridelberg et al., 2014).

As a result, an approach based on Lawrence Green's theory of human behaviour must be used to determine human behaviour from the level of health, which suggests that behaviour is formed by several factors, one of which is predisposing factors, which include knowledge, attitudes, and motivation, must be used to determine human behaviour from the level of health. Lawrence Green is credited with developing this hypothesis, first proposed in 1980. It attempts to understand human behaviour from the standpoint of health. Two essential elements impact the health of an individual or a society: factors caused by conduct and factors that are not caused by behaviour (Lawrence, 2007; Lawrence & Kinn, 2013).

Behaviour is influenced by three main factors, summarized in the acronym PRECEDE. Predisposing, Enabling and Reinforcing Causes in Educational Diagnosis and Evaluation. PRECEDE is a direction to follow when assessing or diagnosing, and evaluating behaviour in the context of health education (promotion) activities. PRECEDE is a stage in the process of analysing an issue. The preceding processes or phases are divided into five categories. It is necessary to assess the overall quality of life and the social issues and demands of a particular community in the first stage. The second stage is determining the health factors of the problem and the need identified. The third stage entails investigating the behavioural and environmental factors that influence the development of health issues. The

fourth step involves identifying the elements that influence, reinforce, and enable behaviour and lifestyle choices. Five-stage intervention planning consists of determining which health promotion, education or policy-related interventions are most effective in inducing desired changes in behaviour or environment and which factors support those changes in behaviour and environment to achieve the desired results (Binkley & Johnson, 2013; James et al., 2021).

Furthermore, this Precede model can be described as the behaviour itself is determined or formed from 3 factors: 1) Predisposing factors that are manifested in knowledge, attitudes, motivation, beliefs, values, and so on. 2) Enabling factors to manifest in the physical environment, the availability or unavailability of health facilities or facilities. 3) Reinforcing factors, which are manifested in the attitudes and behaviour of health workers, or other officers, which are a reference group for community behaviour. Meanwhile, PROCEED: Policy, Regulatory, Organizational Construct in Educational and Environmental Development is a direction in planning, implementing, and evaluating health education (promotion). If PROCEED is the problem diagnosis phase, then proceed is the planning, implementation and evaluation of health promotion. Proceed consists of four additional stages. In the sixth stage, the interventions identified in the fifth stage are implemented. The seventh stage requires evaluation of the intervention process. The eighth stage involves evaluating the impact of the intervention on the factors supporting the behaviour and on the behaviour itself. The ninth and final stage, consisting of outcome evaluation, is to determine the final effect of the intervention on the health and quality of life of the population (Bahadori et al., 2021; Guevarra et al., 2021).

Laurence Green's theory provides accurate information and description in the implementation of patient safety which includes three factors, namely predisposing, enabling, and reinforcing factors. This can be the right foundation for nurses to carry out patient safety. Finally, nurses may effectively adopt and enforce patient safety if they take appropriate strategies and behaviours. Patient satisfaction with the quality of service may be improved in this manner, and the quality of service in safeguarding patients while they are having treatment at the hospital can be guaranteed.

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