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Original Research

Gender Differences In Covid-19 Anxiety Syndrome Among Filipino Nursing Students

Ryan Michael F. Oducado[1*]

[1] College of Nursing, West Visayas State University, Philippines

Background: *The global COVID-19 outbreak has affected all sectors of society. Nursing students were not exempted. This study examined COVID-19 anxiety syndrome among Filipino nursing students and whether significant differences existed according to gender.*

Methods: *This cross-sectional study used the COVID-19 Anxiety Syndrome Scale (C-19ASS) as the primary tool for data collection. Significant gender differences were tested using the Mann-Whitney U test.*

Results: *Results showed that the composite score in the C-19ASS was 3.92 (SD=.69) indicating a moderate to a high level of anxiety syndrome features associated with COVID-19 among nursing students. The mean scores in the preservation and avoidance factors were 3.94 (SD=.76) and 3.88 (SD=.91), respectively. Female nursing students had a significantly higher (p=.004) COVID-19 anxiety syndrome compared to male nursing students.*

Conclusion: *The global outbreak of COVID-19 brought about extraordinary anxiety syndrome and stressful situations among nursing students. Nursing students, particularly female students, may benefit from additional support and guidance during the COVID-19 pandemic.*

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CONTACT
Ryan Michael F. Oducado
rmoducado@wvsu.edu.ph
College of Nursing, West Visayas State University, Philippines

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INTRODUCTION

COVID-19 is a very infectious and potentially lethal disease with an estimated global case fatality rate of 3.7% (Tee et al., 2020a). The disease outbreak has resulted in overwhelming changes in the lives of many (Nikčević & Spada, 2020). It has affected all sectors of society and the education sector was not exempted (Moralista & Oducado, 2020; Rabacal et al., 2020). It has caused not only a health catastrophe but social, economic, and educational crisis as well (Sugiyanto et al., 2020).

The COVID-19 outbreak was declared the sixth Public Health Emergency of International Concern under International Health Regulations that affected several countries around the world (Aylie et al., 2020; Levkovich & Shinan-Altman, 2021; Rabacal et al., 2020). As of 17 January 2021, there are already 93,194,922 recorded cases of COVID-19 worldwide (World Health Organization, 2021) and the number of confirmed COVID-19 cases in the Philippines has reached over half a million

(Philippine Department of Health, 2021). Unfortunately, the cases and deaths of COVID-19 are still increasing.

The profound and dramatic changes brought by the COVID-19 pandemic pose threat to mental health and well-being and eventually led to the rise of pandemic-related psychological distress that may last beyond the course of the pandemic (Nikčević & Spada, 2020; Tee et al., 2020a). The uncertain prognoses, shortage of resources, looming financial losses, conflicting messages from authorities, likewise restrictions and lockdown measures to contain virus transmission and minimize the spread of COVID-19 may result in a range of psychological reactions, feelings of social isolation, emotional distress, and abnormally increased anxiety (Brooks et al., 2020; Pfefferbaum & North, 2020; Serafini et al., 2020). Recent studies have reported the negative impact of the COVID-19 pandemic on psychological, emotional, and mental health. For example, the mental health of more than one-fifth of teenagers of a study conducted in China was reportedly affected (Zhang et al., 2020). A study in Ethiopia among university students reported 21.2%, 27.7%, and 32.5% had depression, anxiety, and stress, respectively (Aylie et al., 2020).

Anxiety, depression, and stress were also prevalent among adolescents in India (Nepal et al., 2020). In the Philippines, a study during the early phase of the pandemic reported 16.9%, 28.8%, and 13.4% experienced moderate to severe depressive symptoms, anxiety levels, and stress levels, respectively (Tee et al., 2020b). Moreover, the study disclosed that the pandemic had a greater psychological impact among students (Tee et al., 2020b). Among nursing students, the COVID-19 pandemic sparked a period of novel and demanding challenges (Savitsky et al., 2020a). However, while there has been a surge in research on the psychological impact of the pandemic, there are still limited academic works on COVID-19 anxiety syndrome conducted among nursing students.

Moreover, given the novelty of the COVID-19, not all aspects of the disease are known. It may be necessary to determine the combined avoidance, checking, worrying, and threat monitoring related to COVID-19 (Nikčević & Spada, 2020) among nursing students in the Philippines, hence, this present study. Assessing the COVID-19 anxiety syndrome among nursing students is necessary in order to identify the any possible impact of COVID-19 on the mental health of nursing students. The purpose of this study was to assess the COVID-19 anxiety syndrome among Filipino nursing students and whether there are significant differences in the COVID-19 anxiety syndrome experienced by male and female nursing students.

MATERIALS AND METHOD

A cross-sectional research design was utilized in this study. A convenience sample of 175 nursing students was recruited for this study and completed the online survey in November 2020. Nursing students enrolled in the first semester of academic school year 2020-2021 were included in the study. Participants were reminded at the beginning of the survey that proceeding and completing the survey indicates voluntary consent to participate in the study. Anonymity and confidentiality were maintained throughout the study.

The COVID-19 Anxiety Syndrome Scale (C-19ASS) by Nikčević & Spada (2020) was the primary measure used in this study. The C-19ASS is a 9-item self-report measure loading on two factors: preservation (C-19ASS-P) and avoidance (C-19ASS-A). Participants were asked to indicate their level of agreement on each item using a 5-

point Likert-type scale with answers ranging from "1-Not at all" to "5-Nearly every day". Both the C-19ASS-P (6 items; α = .86) and the C-19ASS-A (3 items; α = .77) demonstrated acceptable levels of reliability (Nikčević & Spada, 2020). The C-19ASS had a reliability of α = .83 among Filipino graduate students (Oducado, Parreño-Lachica, et al., 2021).

For this study, the overall C-19ASS had a reliability of α = .80 while the C-19ASS-P had α = .79 and the C-19ASS-A had α = .72. Higher scores indicate a higher level of anxiety syndrome. Data were analyzed using SPSS version 23. Test of normality revealed a p-value of .000. The Mann-Whitney U test was used to test for differences according to gender. A p-value of less than .05 was considered significant.

RESULTS

Table 1 shows that the average age of the participants was 19.55 (SD=1.02). The majority were females (80.6%). The Level 1 or first-year participants were comprised of 37.7%, the Level 2 or second-year participants were 36%, and the Level 3 or third-year participants were 26.3%.

Table 1. Profile of participants

Profile	M	SD	f	%
Age	19.55	1.02		
Gender				
Male			34	19.4
Female			141	80.6
Year Level				
Level 1			66	37.7
Level 2			63	36.0
Level 3			46	26.3

Table 2 shows the composite score in the C-19ASS was 3.92 (SD=.69). The mean scores in the preservation and avoidance factors were 3.94 (SD=.76) and 3.88 (SD=.91), respectively.

Table 2. COVID-19 anxiety syndrome

Items	M	SD
Checked self for symptoms	3.88	1.19
Concerned about not adhering strictly to social distancing guidelines	4.02	1.03
Read about news	3.91	.98
Checked family members and loved ones for signs	3.98	1.10
Paid close attention to others displaying possible symptoms	3.87	1.09
Imagined what could happen to family members	3.98	1.11
Preservation subscale score	3.94	.76
Avoided using public transport	3.52	1.32
Avoided going out to public places	3.78	1.15
Avoided touching things in public spaces	4.34	.91
Avoidance subscale score	3.88	.91
Anxiety Syndrome composite score	3.92	.69

Table 3 shows that there were significant differences in the general COVID-19 anxiety syndrome of nursing students based on gender (p=.004). In addition, there were significant differences in the preservation subscale (p=.006), however, no significant differences in the avoidance domain (p=.083) according to gender.

Table 3. Difference COVID-19 Anxiety Syndrome

Variables	Preservation		Avoidance		Anxiety Syndrome	
	Mean Rank	p-value	Mean Rank	p-value	Mean Rank	p-value
Gender		.006		.083		.004
Male	66.63		74.57		65.47	
Female	93.15		91.24		93.43	

DISCUSSION

This study investigated COVID-19 anxiety syndrome among nursing students. It was demonstrated that nursing students experienced moderate to high levels of COVID-19 anxiety syndrome as indicated by the above midpoint score obtained in the C-19ASS. Findings of other studies similarly reported prevalence of moderate to high levels of COVID-19 anxiety, stress, fear, extremely negative emotions, and other psychological distress among nursing students. It was found that moderate and severe anxiety was 42.8% and 13.1% respectively among nursing students in Israel (Savitsky et al., 2020b) while 22.9% and 18.1% respectively among nursing students in Nepal (Dangal & Bajracharya, 2020). Likewise, nursing students in Spain reported that stress increased substantially during lockdown (Gallego-Gómez et al., 2020).

It was also found that Australian nursing students reported significantly higher levels of anxiety, difficulty sleeping, concentrating, and eating (Kochuvilayil et al., 2021). A moderate to a high level of fear was also noted among nursing students in the Philippines (Oducado, Tuppal et al., 2021). Recent studies also found that nursing students practiced avoidant behaviors to prevent COVID-19 transmission. For instance, among nursing students in Saudi Arabia (Begum, 2020) and Nigeria (Kanikwu & Nwazuruoke, 2020), the majority practiced COVID-19 prevention protocols, followed social distancing to avoid contact with infected persons, and avoided going to crowded places. The findings suggest that nursing students may experience mental health concerns related to the pandemic and that the COVID-19 crisis has resulted in unparalleled stressful situations among nursing students (Savitsky et al., 2020a).

While it seems noteworthy that nursing students tend to follow health protocols that prevent virus transmission and students take appropriate preventive and control to break the chain of COVID-19 spread (Purnamasari & Raharyani, 2020), caution is warranted that this will not lead to obsessional thinking and become overly excessive resulting in psychological distress. This study also demonstrated that female nursing students reported a higher level of COVID-19 anxiety syndrome compared to male nursing students. This result of this study indicates that women compared to men tend to be more avoidant and careful at the same time constantly monitor and worry more about COVID-19. This result is relatively consistent with other prior studies that found females tend to report higher levels of emotional reactions and preventive behaviors to COVID-19 than males. Women showed more severe anxiety and fear than men in a study conducted in China among nurses and nursing students (Huang et al., 2020).

The anxiety level of female students was higher than males among nursing students in Israel (Savitsky et al., 2020b). It was also noted that the level of stress by females was higher than that of males in a study among nursing students in Turkey (Aslan & Pekince, 2020). Correspondingly, females were more prone to anxiety as compared to males among nursing students in Nepal (Dangal & Bajracharya, 2020). Likewise, female nursing students had higher fear and perceived COVID-19 impact than male nursing students in a study conducted in the Philippines (Guillasper et al., 2021; Oducado, Tuppal et al., 2021). Gender was also a factor that affected Chinese nursing students' COVID-19 prevention behavior (Yuan et al., 2020).

A study in Israel furthermore revealed that women exhibited higher levels of precautionary behavior and emotional responses than men (Levkovich & Shinan-Altman, 2021). The result of this study may be attributed to biological and hormonal changes, sociocultural factors, emotional regulation, and gender trait differences among men and women (Aslan & Pekince, 2020; Huang et al., 2020; Oducado, Tuppal et al., 2021; Oducado, Rabacal et al., 2021; Sugiyanto et al., 2020). Additionally, women may believe that being more careful and concerned can help reduce their risk of being severely affected by COVID-19 (Galasso et al., 2020). The finding suggests that female nursing students may require more support and guidance (Oducado et al., 2017) during a crisis like this COVID-19 pandemic.

This study is limited to the self-report of a convenient sample of nursing students in the Philippines. The results cannot be generalized to all nursing students in the country and abroad. Also, whether anxiety changes over time cannot be answered by the cross-sectional research design of this study. The researcher warrants caution in the use and interpretation of the findings of the current study.

CONCLUSION

This study highlighted that the global COVID-19 outbreak has resulted in extraordinary anxiety syndrome causing constant worrying, checking, monitoring of threat, fear, and avoidance among nursing students. The findings of this study suggest that the mental health of nursing students especially females requires focal attention during the pandemic and in times of crisis. Neglecting to look into the negative psychological impact of the COVID-19 crisis among students may result in unfavourable concerns. Nursing students may benefit from additional support and guidance during this pandemic. It may be necessary for academic nursing institutions to develop interventions that foster positive coping and to generate strategies that promote mental health to help allay the anxiety and stress of nursing students during the worldwide health crisis.

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Original Research

A Qualitative Study Of Emergency Nurses' Basic Life Support Practices In A Ghanaian University Hospital

Alex Darteh Afrifa[1*], James Kojo Prah[2], Mohammed Najimudeen Abdulai[3]

[1,2,3] University of Cape Coast Hospital, Cape Coast, Ghana

ABSTRACT

Background: *Medical emergencies are common but Sudden Cardiac Arrest (SCA) incidences are rare; yet when they occur could be life threatening leading either to disability or death. During SCA incidents, health care professionals will be required to act skilfully and swiftly to restart the heart and stabilise the patient until advanced care can be accessed or provided. There is evidence that victims of cardio and/or respiratory arrest whilst in the hospital will have improved outcomes if Cardiopulmonary Resuscitation (CPR) is initiated within three to five minutes. The objectives of this study were to find if emergency nurses were adequately resourced to practice Basic Life Support (BLS), and the ease or difficulties with which they practice BLS.*

Methods: *This Qualitative Descriptive (QD) study was conducted at the University of Cape Coast Hospital (UCCH) between June and September 2019. Six nurses were purposively recruited for the study. All interviews were audio-recorded and transcribed verbatim. The transcription was done with Microsoft Word and transferred to Microsoft Excel for thematic analysis using an inductive descriptive approach. Data analysis took a conventional qualitative content analysis approach.*

Results: *Four of the participants were females whilst two were males. During data aggregation and analysis, 17 first-level codes were extracted from which two themes, five categories and six subcategories were obtained for discussion. The major themes were: (1) Basic Life Support (BLS) equipment and material resources, and (2) working environment and human resource.*

Conclusion*: The study found that nurses working at emergency ward at UCCH were adequately resourced and well prepared to practice BLS. They however had challenges as their work seem to be hindered by patients who present to the ward without emergency needs and unavailability of emergency drugs.*

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CONTACT
Alex Darteh Afrifa
✉
alex.afrifa@ucc.edu.gh
University of Cape Coast Hospital
Cape Coast, Ghana

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INTRODUCTION

Medical emergencies are common but Sudden Cardiac Arrest (SCA) incidences are rare; yet when they occur could be life threatening leading either to disability or death. During SCA incidents, health care professionals will be required to act skilfully and swiftly to restart the heart and stabilise the patient until advanced care can be accessed or provided. Preparedness therefore is key in responding effectively to real incidents of SCA. The current practices and level of preparedness of nurses working in the EW to perform Basic Life Support (BLS) will have an influence on whether they will be able to respond appropriately when faced with such emergencies in their practices. Though they are trained whilst they were students and have had some in- service training, there is currently research that have assessed their resourcefulness.

Emergency care is therefore crucial in the health care delivery system of any nation as the outcomes of patient management is greatly influenced by the swiftness by which health care professionals identify, plan, and commence treatment in emergencies. There is evidence that patients who develop cardio and/or respiratory arrest whilst in the hospital will have improved outcomes if Cardiopulmonary Resuscitation (CPR) is initiated with three to five minutes after the onset of the incidence (Saramma, Suja, Dash, & Sarma, 2016).

Nurses are considered as first responders in attending to in-hospital Cardiac Arrest (IHCA) victims as establish by Guetterman et al. (2019) in addition to being members of the resuscitation team and clinical or administrative leaders. If effective BLS which is defined as: "*the maintenance of airway patency and the support of breathing and circulation without the use of equipment other than protective devices"* (Perkins et al., 2015. p81), is performed within three to five minutes after SCA, increases the chances of survival of the victim (Saramma, Suja, Dash, & Sarma, 2016).

Modern era CPR was introduced by Kouwenhoven, Jude, and Knickerbocker in 1960, when the trio published their classic work on closed chest cardiac massage and emphasized the ease with which people can perform CPR as: *"anyone, anywhere, can now initiate cardiac resuscitative procedures, all that is needed are two hands"* (Kouwenhoven, Jude, & Knickerboker, 1960). The authors described the benefits of external chest compressions and confirmed that when the technique was performed on 20 patients, there was an overall permanent survival rate of 70%. About 43 years after this publication, Peberdy et al. (2003) found in a prospective, multisite, observational study of in-hospital cardiac arrest outcomes in 207 USA hospitals an overall survival-to- hospital discharge rate after a cardiac arrest to be 17%. Similarly, a study in the United Kingdom (the BRESUS study) eleven years earlier, had found the rate of survival-to- hospital discharge to be 21% (Tunstall-Pedoe et al., 1992).

The lack of significant progress over the years in increasing the chances of survival of Sudden Cardiac Arrest (SCA) victims in an era of technological advancement could be a result of either lack of knowledge acquisition and/or retention, or skills acquisition and retention, or the unwillingness of health professionals to initiate CPR. A qualitative study in selected hospitals in the Volta Region of Ghana (Atakro, Ninnoni, Adatara, Gross, & Agbavor, 2016) with the aim to explore challenges experienced by Registered General Nurses working in the EW found that lack of preparation for EW role; verbal abuse from patients‟ relatives; lack of resources; stressful and time consuming nature of EW, and overcrowding as major challenges in the EW.

Similarly, a study Afaya et al., (2021) aimed at exploring the challenges experienced by nurses working in the EW of a secondary referral hospital in Ghana, found overcrowding; understaffing; lack of emergency equipment; and inadequate managerial support as major issues confronting EW staff. The purpose of this qualitative study was to

explore the challenges experienced by nurses practicing at the University of Cape Coast Hospital concerning their BLS resources availability and practices. The main aim of this study was to explore the BLS practices of emergency nurses practicing in the University of Cape Coast Hospital. The other purpose of study are to determine if nurses working at the emergency unit of the UCCH are adequately prepared and resourced to practice BLS and to ascertain challenges emergency nurses face in their practice of BLS at the UCCH.

MATERIALS AND METHOD

This Qualitative Descriptive (QD) study was carried out to study nurses working in the Emergency Ward‟s BLS practices at UCCH. QD research studies seek to discover and understand a phenomenon, a process, or the perspectives and worldviews of the people involved. To stay true to the intent of QD, the data is presented as a description of the patterns and themes that emerged from the data but not re-presented (Sandelowski, 2010), since the intent of the methodology was to provide a descriptive summary of the data collected without transforming the data through the author‟s interpretation.

The study‟s focus was on emergency nurses practicing in the University of Cape Coast Hospital (UCCH). The hospital is an 80-bed capacity district-level health facility. The facility has a catchment population of 35,624 (excluding students and workers population). The hospital has a 10-bed emergency ward that attends to all manner of emergency clients. The emergency ward attended to 3,623 patients between January and December 2020. The study had ethical approval from the Institutional Review Board of the University of Cape Coast (UCCIRB/EXT/2019/06), permission was also sought from the management of UCCH to use the facility for the study.

The target population for the study was all nurses practicing in the emergency ward at UCCH. Six (6) nurses were purposively selected due to their availability and experience to be interviewed. The participants were contacted for their willingness to participate in the study and time and venue for interview was arranged. Each participant that agreed to be interviewed was made to sign an informed consent form prior to participation and promised their complete anonymity. Each participant was interviewed separately.

Data collection tool and procedure with the objectives to find out if emergency nurses are adequately resourced to practice BLS and to establish the ease or difficulties with which they practice BLS, a semi-structured interview guide designed was used as the primary instrument for the face-to-face interviews. Six (6) interviews were conducted in English language at UCCH. All interviews were tape-recorded using open- ended questions in a conversational style. Field notes and memos were also taken in conjunction with the interviews to note observations, and casual encounters with participants. On-going data analysis took place throughout the study. All of the taped interviews, memos, and field notes were stored in a folder on the personal computer of the Principal Investigator (PI).

The data collection instrument had two (2) sections: (1) background information and (2) interview guide. The background information section collected data such as: gender, level of education, work place, years of practice as an emergency nurse, capacity of their emergency ward, if they had defibrillator(s) in the hospital and whether there is a defibrillator assigned solely to the emergency ward. The interview guide section asked questions such as: can you describe your experiences of working as an emergency nurse, have you encountered an event of cardiac arrest in practice?, do you have the full compliments to perform CPR in the emergency ward?, how do you assemble equipment during SCA event?, do you feel you would you have been happier working in another ward?, and is there anything you would like to add that has not been asked already?.

The data analysis took a conventional qualitative content analysis approach. In this

approach, coding categories are derived directly from the text data. It was data- driven and guided by conventional thematic analysis strategies identifying regular patterns of meaning both within and across the interviews, therefore allowing for identification of themes. The transcripts were repeatedly read by both authors to get an overall impression and to become familiar with the diversity of the data. The data analysis followed Sandelowski (2000) procedure, that are immersion in the data by reviewing and rereading all the interview transcripts, listening to the audio-recordings, and exploring the content and possible meanings of the data, breaking down and refining interview data into discrete codes, or units of meaning; and systematically comparing each coded element with all previously coded elements for similarities and differences.

The audio interviews recorded were transcribed using Microsoft Word and transferred to Microsoft Excel for analysis. Sentences and phrases were grouped, sorted and filtered using different colours. From here, the themes, categories, and subcategories emerged. The themes, categories, and subcategories therefore formed the basis for the discussion and appropriate summaries and conclusions made.

Transcription process are the PI conducted and transcribed all the audio-recorded interviews. This was very valuable as it allowed the author to stay close to the data. Being familiar with the emergency settings and BLS practices resolved the issue of third party transcription errors. To ensure accuracy, the transcription was done soon after each interview and were further reviewed by both authors. All identifying information were removed during the transcription process including names of participants and other people. Any reference to locations were removed as well. Extra steps were taken to protect the anonymity of the participants. Being both the interviewer and transcriber, the PI was able to include relevant nonverbal communication as he was present during the interview to witness it.

Member checking: a summary of the interviews was written following transcription, reviewed and sent to each participant as promised during the consent process. The participants were asked to review the summary and respond by asking either for changes to be made if there were inaccuracies or confirming if the summary was an accurate interpretation of their perspective. As asserted by Lincoln & Guba (1985), it adds to the credibility of the research by validating the accuracy of the findings of the interview, and it gives authority to the participant to confirm their perspective thus reducing interviewer bias. The summaries were reviewed and approved by the participants as originally written without any changes requested.

Researcher bias: while the experience of the PI as a practitioner involved in emergency care was a beneficial as an interviewer, negatively it created the opportunity for researcher bias. The researchers recognized that each participant was an expert of his/her own experience and what he/she believed must not come under influence by the researchers.

Rigour: to support the rigour of the study, Guba & Lincoln (1994) five criteria of trustworthiness: (a) credibility, (b) dependability, (c) confirmability, (d) transferability, and (e) authenticity was followed. **Credibility:** credibility or confidence in the truth of the findings was enhanced through investigator triangulation as all participants were asked the same questions. This challenged assumptions and ensured that the findings remained grounded in the participants‟ own experiences and that no data was lost. Again, to increase the validity of the research, all two investigators performed the analysis independently and the results were discussed to obtain consensus. **Dependability and confirmability:** were ensured through the construction of an audit trail, including raw data and memos from data collection and analysis that logged observations, impressions, reflections, process notes, and the basis of analytic decisions. **Transferability:** was enhanced through

description of the demographic profiles, context, and experiences of the participants. These rich depictions, and the inclusion of participant quotes in the findings, supported a fair and authentic presentation of the range of participants‟ realities. **Authenticity:** this study used the authenticity criteria to reinforce the need to give a voice to the participants, to educate and improve understandings of personal constructions, and to stimulate and empower action through dissemination of findings.

RESULTS

An important feature of QD is the recommendation to produce a final product that describes the participants‟ experiences in a language similar to the participants‟ own language (Neergaard, Olesen, Andersen, & Sondergaard, 2009). The objective of this study was to follow the QD method so it was important that the final product be recognizable to the participants and not transformed to another level of meaning.

This is characteristics of respondent. Respondent consist of four (4) of the participants were females whilst two (2) were males. Their educational levels were BSc (n=3) and Diploma (n=3). They have practiced for different number of years ranging from five (5) to twelve (12) years (average = 9.2 years). Of these years, they have practiced for varied number of years at the EW (average = 2.8 years) (Table 1).

Table 1. Participant characteristics

Participant	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Gender	Female	Female	Male	Male	Female	Female
Level of Education	BSc	BSc	Diploma	BSc	Diploma	Diploma
Years of Practice (years)	9	12	8	5	10	11
Years of Practice as at the EW (years)	2	4	1	2	3	5

In the stage one of data aggregation and analysis, 17 first-level codes were extracted. After classifying and merging them, two (2) themes, five (5) categories and six (6) subcategories obtained (Table 2). These themes, categories and subcategories will therefore form the basis for discussion in this study.

Table 2. Themes Categories and Subcategories from the data

Themes	**Categories**	**Subcategories**
BLS equipment and material resources	Accessto equipment Access to supplies and Emergency drugs	Procurement of drugs Consumables
Working environment and human resource	Crowding Job satisfaction Human resource	Outpatient consultation in the EW Attrition of trained staff

One of the major themes that emerged was BLS equipment and resources. This theme describes the participants‟ description of equipment and material resources needed and availability for proper functioning of their emergency ward. Equipment and good material resources are essential for every emergency care situation. All of the participants described equipment availability as adequate. The EW has a trolley improvised as „crash cart‟ though material resources (consumables and emergency drugs) are not readily

available. Some of the participants described the situation as:

"…yes, we have, we have all the equipment: we have the ambubag, oxygen, drugs, tubes and defibrillator. All arranged on a trolley that we refer to as crash cart."

"…equipment for CPR we have it, we have the whole things that we need to do the CPR."

"…now we have gotten a trolley that we have arranged them, all the tubes, the mask, the ambubag, everything has been arranged and the emergency drugs that we have to give, some of them, not all the emergency drugs."

Procurement of drugs and consumables: although equipment and material resources seem not to be a problem for the provision of emergency services, the mode of access of consumables and emergency drugs is cumbersome. As participants‟ described the situation:

"I suppose resources, consumables and things are not readily available."

Another participant describes the situation as:

"…consumables have to be procured from pharmacy by the patient."

It did not look like that was the only hindrance they had with emergency drugs and supplies, as another participant said:

"…consumables and emergency drugs sometimes have to be procured by patients or relatives from outside… I mean a pharmacy outside the hospital and sometimes it may take hours or even a whole day"

Another participant described the situation as:

"…and the emergency drugs that we have to give, some of them, not all the emergency drugs are available."

Again, another participant also described the situation as:

"…my experience, (clears throat). It's quite, errrrrm it's quite challenging anyway, because most of the time, the available things to work with are not available, they are not there for you to work with, especially when it comes to the emergency drugs (pause)…the emergency drugs, we don't have them, basic things that we need…"

Working Environment and Human Resource. Another major theme that came up was working environment in connection with the ease or difficulties in the practice of BLS. This theme captured the participants‟ description of their working environment and human resource needed and whether it is conducive or otherwise to practice BLS. Describing the working environment, the participants described their working in the EW environment as stressful, but seem to enjoy their work.

Crowding (Outpatient consultation in the EW): according the participants, a consulting room attached to the EW affects their operations leading to crowding in the EW. The consulting room attends to patients who present at any time of the day when they should have attended outpatient clinic. Some of the participants expressed this as:

"…and the number of patients that troupe into the EW most of them are not emergencies."

Another expression was:

"they come there probably to dodge the waiting at the outpatient clinic"

A participant summed the situation as:

"crowding is a major problem in our EW, the area become so full – with patients who shouldn't be there, and we have to attend to them as well."

Human resources (Attrition of trained staff): staffing was cited as a problem faced by practitioners at the EW, as they did not seem to have enough and the few the train are transferred out to other wards.

A participant described the situation as:

"It's the practices because we are just a few and it's not everybody that is able to

help when there is cardiac arrest or when we have to do CPR, we don't have much hands"

The situation was summed-up by a participant as:

"...when staff are trained, they are transferred to another ward during the yearly staff changes. So we have to train the new staff we get"

Job satisfaction: working in the EW did not seem too easy though they enjoyed their work.

A participant puts it as:

"...working in the EW is exciting and hectic at the same time."

Another described the environment as enjoyable:

"...although it is hectic, I enjoy doing what I do so..."

DISCUSSION

This study sought to explore the preparedness and resourcefulness of emergency nurses related to BLS practices in the EW. It became apparent that equipment and human resources were not a hinder to BLS practices in the EW yet proximity of supplies especially emergency drugs and consumables were cited as problems. Again, some essential drugs and consumables have to be procured from the pharmacy (sometimes from outside the hospital) for use during emergencies. The Ministry of Health (MOH) of Ghana published a guidelines document for the establishment and running an emergency unit in Ghana (Ministry of Health, 2011). The guidelines explicitly state the minimum equipment requirement for an emergency unit and UCCH"s EW appears meet the minimum requirements. Patients having to purchase drugs and consumables before receiving care is not acceptable as the MOH indicates that financial consideration should not be a barrier to the initial treatment of the patient in an emergency.

Though the EW does have an improvised emergency crash cart, the ideal emergency crash cart should be a wheeled chest of drawers that stores lifesaving equipment, drugs, or anything that will be required in the event of a medical emergency. It is extremely essential that cart is well- stocked with all the necessary drugs and equipment to ensure that the staff are able to manage emergencies conveniently. The emergency crash cart has a drawer for medications; an intravenous solutions drawer; a drawer each for adult and paediatric intubation; a drawer for intravenous and blood supplies; a drawer for oxygen delivery and tubing; and a drawer for miscellaneous items (UC Davis Health, 2021). In this study, the drugs and supplies did not pose a problem in BLS practice but arrangement and location within the EW is a problem. Again, the mode of acquisition of some essential emergency drugs especially from either the hospital"s pharmacy or externally causes delays in care delivery at the EW.

Another theme that emerged from this study was the participants" description of their work environment as to whether it is conducive or otherwise to practice BLS. Though the participants enjoyed their work environment, overcrowding was identified as a problem in the EW. This crowding, according to them, is as a result of a consulting room attached to the EW. Crowding occurs, according to the American College of Emergency Physicians (ACEP), when the recognized need for emergency services exceeds available resources for patient care in the EW, hospital, or both (American College of Emergency Physicians (ACEP), 2019).

ACEP noted that crowding can cause several problems, including increased length of stay for admitted patients, decreased patient satisfaction for both hospitalized and EW patients, diminished EW staff satisfaction and employee engagement, significant delay in evaluation and treatment of emergency patients, and patients leaving prior to completion of medical treatment. When crowding occurs, patients are often placed in hallways and

other non-treatment areas to be monitored until EW treatment beds or staffed hospital inpatient beds become available. Additionally, a systematic review Stang et al. (2015) found an association between EW crowding measures and quality of care. It therefore becomes the responsibility of hospital leadership and care providers to quantifiably measure, analyze, and address identifiable and recurrent causes of crowding in order to prevent poor outcomes related to crowding. The ACEP recommends that hospital leadership utilize a crowding assessment tool to consistently quantify saturation events and analyze data to identify specific mitigation actions that involve the entire hospital. Furthermore, Abicho (2017) recommends that physical capacity of EW and hospital should be increased to contain the surge.

CONCLUSION

This study explored emergency nurses‟ basic life support practices. While participants mentioned that they had difficulty in their practice, they enjoyed working in the EW. Due to the fact that patients attend to the EW without prior appointment and patients attending the emergency when they actually should have attended the out- patient clinic, staff gets overwhelmed with the surge each day. This study further sought to raise awareness of the importance of BLS preparedness among EW nurses, and hopefully, the results from this study will stimulate discussions and actions both at the micro (unit and hospital level) and macro levels of emergency care, that is, through education and conceptions of care. More work is needed in the area of emergency attendance and necessary policies established to control attendance to the EW.

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Original Research

Dhikr Therapy Can Improve Muscle Strength In Non-Hemorrhagic Stroke Patients

Setiyawan[1*], Dewi Yuni Anggraeni[2], Annisa Cindy Nurul Afny[3]

[1,2,3] Faculty of Health Sciences, Kusuma Husada Surakarta University Indonesia

ABSTRACT

Background: *Non-hemorrhagic stroke is a disease that occurs due to a blockage in certain brain blood vessels. Therefore, the brain area is not supplied with energy and oxygen so that the brain tissue does not function. The problem that occurs in non-hemorrhagic strokes is the weakness of the limbs and facial muscles. Non-pharmacological therapy for non-hemorrhagic stroke sufferers is dhikr therapy. Dhikr therapy relies on feelings and heart to calm the soul and increase muscle strength. This study aims to determine the effect of dhikr therapy on muscle strength in non-hemorrhagic stroke patients*

Methods: *This study used a quasi-experimental research design with pre-and post-test with control group. Non-probability sampling was used to determine the sample, which consisted of 54 respondents: 27 in the treatment group with ROM therapy, dhikr and 27 in the control group with ROM therapy. Manual Muscle Testing (MMT) Instrument is used to measure muscle strength. The data were analyzed using an independent T-test*

Results: *There is an effect of dhikr therapy on muscle strength after implementing the therapy in the intervention and control groups with a p-value of the right upper extremity of 0.000, p-value of the left upper extremity of 0.008, p-value of the right lower extremity of 0.007 and p-value of the left lower extremity of 0.007*

Conclusion: *The results of this study indicate that dhikr therapy can improve muscle strength in non-hemorrhagic stroke patients at the Sibela Community Health Center of Surakarta*

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CONTACT
Setiyawan
✉
setiyawan@ukh.ac.id
Faculty of Health Sciences, Kusuma Husada Surakarta University Jl. Jaya Wijaya No. 11 Banjarsari, Surakarta, Indonesia.

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INTRODUCTION

Stroke is a neurological dysfunction caused by disruption of blood flow in the brain that occurs suddenly within a few seconds or quickly within hours (Barakat et al., 2014). Stroke is a cerebrovascular disease that occurs due to impaired brain function associated with blood vessel disease that supplies blood to the brain (Wardhani, 2018). Stroke is also called a brain attack or brain attack, which occurs when a part of the brain is damaged due to lack of blood supply to that part of the brain. Inadequate oxygen and nutrients carried by blood vessels cause brain cells (neurons) to die and the connections

or connections between neurons (synapses) are lost (De Silva et al., 1967). Non-hemorrhagic stroke is the death of brain tissue due to disruption of blood flow to the brain area, which is caused by blockage of the cerebral or cervical arteries (Zazulia & Diringer, 2013).

According to the American Heart Association (2017) stroke is the leading cause of death among heart disease, cancer, chronic lower respiratory disease, and accidental injury. The main cause of stroke is high blood pressure. However, stroke also occurs in about 8% of children with sickle cell disease (Sandmire et al., 1976). In Indonesia, stroke is the third leading cause of death after heart disease. A Stroke prevalence reaches 8.3 per 1000 population, 60.7 percent of which are caused by non-hemorrhagic strokes.

As many as 28.5% of the sufferers died and the rest experienced total or partial paralysis. Only 15% can recover completely from a stroke or disability (Nasution, 2013). In Central Java Province, the prevalence of stroke in 2019 was 3.91% per 1000 population. While the data report from the Sibela-Surakarta Health Center, the number of stroke cases in 2017 was 89 cases and the number of stroke cases increased in 2018 to 136 and for 2019 non-hemorrhagic strokes increased to 350 patients, in 2019, non-hemorrhagic strokes increased very far from the previous year.

Death of brain tissue due to stroke can cause decreased or even loss of function controlled by the network. One of the symptoms that are caused is muscle weakness in the limbs (Diputra, 2006). Muscle weakness disturbs a person to do activities so muscle strength is very important for stroke sufferers. Muscle strength is a brief contraction of the striped muscle fibers (voluntary muscle) and each contraction occurs on a single stimulation of the nerve. The force applied to the contraction of the entire muscle is smoothed out by varying the amount of fibers that contract and the frequency of the contraction of each fiber (Pearce, 2012).

The impact of a stroke causes a decrease in the function of the extremities. The function of the extremity is to carry out daily activities and is the most active part, so lesions in the part of the brain that result in weakness in the extremities will greatly inhibit and interfere with a person's daily abilities and activities (Sukmaningrum, 2012). Stroke can cause various levels of disturbances, such as decreased muscle tone, loss of sensibility in some parts of the body. Stroke patients who experience weakness on one side of the limb are caused by decreased muscle tone, so they are unable to move their body (immobilization) (Murtaqib, 2013).

Efforts made on ischemic stroke patients by pharmacological and non-pharmacological ways. Pharmacological therapy performed in non-hemorrhagic stroke patients: thrombolysis therapy, anticoagulant therapy, antiplatelet aggregation, neuroprotector. Non-pharmacological non-hemorrhsanagic strokes include physiotherapy, speech therapy, occupational therapy, social workers, and psychological and religious (Sofwan, 2010). Religious therapy is the therapy of choice to treat stroke problems with interventions that can effectively improve extremity and increase muscle strength. Dhikr therapy means to praise, gratitude and prayer to Allah. Dhikr can be done under any circumstances and can make the heart calmer.

Dhikr in the Al Qur'an is described as calm. Allah Subhanahu wa Ta'ala said: (that is) those who believe and their hearts are at ease by remembering Allah. Remember, only by remembering Allah will your heart be at peace (Surah Ar Ra'du: 28). As Described by Abdel-Khalek, (2007) the benefits of dhikr to patients to get a response of relaxation, calm, awareness, comfort and peace that improve psychological, social,

spiritual and physical health status. Dhikr makes physical calm, including heart rate, pulse and blood circulation to be smooth.

Analysis of dhikr from a medical point of view scientifically presented by Saleh, (2010) states that dhikr is healthy, and seen from contemporary medical knowledge, the pronunciation of "astaghfirullah" can foster calm and nervous stability for patients. Because in the two dhikr recitations there is the letter JAHR which can remove $C0_2$ from the brain (Ubaidillah, 2014). The occurrence of non-hemorrhagic strokes is due to a blockage in the blood vessels, Saleh, (2010) explained that when a person is doing dhikr well and the patient achieves relaxation of the blood vessel muscles, the blockage will gradually shift from its place and eventually be carried away by the heavy flow of blood that flushes. Brain due to the diameter of the blood vessels that widen when doing dhikr. Dhikr with finger joints can improve motor skills that are related to the formed movements and control of movements.

Based on its working principle, dhikr therapy is a type of therapy that has psychological and neurological effects. The rhythmic chant can improve the physiology of the nerves so that the body's mechanism improves (Saleh, 2010). A person's muscle strength occurs when the contraction of the striated muscle fibers (conscious muscle) and each fiber also moves by contracting when stimulated by nerve stimulation or so that the chanting of dhikr can improve nerve physiology and muscle contraction (Pearce, 2012).

The results of a preliminary study conducted by researchers, based on patient data at the Sibela Community Health Center, showed that non-hemorrhagic stroke patients increased every year. In 2017 there were 89 cases, in 2018 it increased to 136 cases, and in 2019 it increased to 350 cases. So far, the intervention at Sibela Community Health Center for non-hemorrhagic stroke patients is ROM, which is given once a week for 15 minutes. Even religious intervention has never been given to non-hemorrhagic stroke patients. Based on the above background, therefore the researchers are interested in researching the effect of dhikr therapy on muscle strength in non-hemorrhagic stroke patients.

MATERIALS AND METHOD

The design of this study used a quasi-experimental research design with a pretest-posttest control group design to determine the effect of dhikr on muscle strength. Respondents were 54 non-hemorrhagic stroke patients at the Sibela Surakarta Public Health Center with the criteria of experiencing muscle weakness, being Muslim and not experiencing a decrease in consciousness. Respondents were divided into two groups, namely 27 in the control group and 27 in the intervention group. The control group was given Range of Motion (ROM) action and the intervention group was given ROM and dhikr therapy.

The dhikr therapy intervention was carried out based on standard operating procedures, namely the pronunciation of the sentence *Astaghfirullah hal adzim* for 15 minutes more than 70 times for 3 days, then the muscle strength was measured with the MMT instrument and the results were compared between the intervention group and the control group. The ethical due diligence has received approval from the Health Research Ethics Commission of dr. Moewardi with Number 367 / II / HREC / 2020. The data analysis technique used the Mann Withney test with p-value <0.05

RESULTS

Results of characteristics according to sex were 59% male. The data show that most non-hemorrhagic stroke sufferers are male.

Table 1. Frequency Distribution of Sex in Control and Intervention Groups (n = 54)

Sex	Control group		Intervention group	
	f	%	f	%
Male	13	48,1	16	59,3
Famele	14	51,9	11	40,7
Total	27	100	27	100

Table 2. Frequency Distribution of Age in Control and Intervention Groups (n = 54)

Variable	Min	Maks	Mean	Median	SD
Age	50	75	61,94	61,00	5,871

Table 2. The results showed that the mean age of the respondents was 61.94 years with the youngest 50 years old and the oldest 75 years old.

Table 3. Differences in muscle strength before and after being given dhikr therapy in the Intervention group (n = 54)

Variable	Group	Extremities	p Value
Muscle strength	Intervention	Right upper	0,005
		Left upper	0,011
		Right lower	0,002
		Left lower	0,004

Table 3. the test results of the treatment group on the right upper limb using the Wilcoxon test obtained a significant value of 0.005 if the p-value <0.05 then Ho is rejected Ha is accepted, which means that there is an effect of dhikr therapy on muscle strength.

Table 4. Differences in muscle strength before and after being given dhikr therapy in the control group (n = 54)

Variable	Group	Extremities	p Value
Muscle strength	Control	Right upper	0,157
		Left upper	0,157
		Right lower	0,157
		Left lower	0,161

Table 4. The test results of the control group on the right upper limb using the Wilcoxon test showed a significant value of 0.157. If the p-value> 0.05 then Ho is accepted, Ha is rejected, which means there is no effect on muscle strength.

Table 5. Differences in muscle strength after being given dhikr therapy in the intervention group and the control group

Variable	Group	Phase	Extremities	p Value
Muscle strength	Control / Intervention	Post test	Right upper	0,001
			Left upper	0,012
			Right lower	0,012
			Left lower	0,008

Table. 5. The results of the test for differences in muscle strength in the two control and treatment groups showed that the right upper limb with a significant value of 0.001, the left upper limb, a significant value of 0.012, 0.012, right lower limb, and a significant value of 0.008 for the left lower limb. From the overall significant value of p-value <0.05, Ho rejected Ha is accepted, which means that there is an effect of dhikr therapy on muscle strength in non-hemorrhagic stroke patients.

DISCUSSION

The results of a study conducted by (Prok et al., 2016) showed that the highest number of non-hemorrhagic stroke respondents was male with 14 respondents (77.8%) compared to women. According to the American Heart Association, the incidence of stroke in men is more than in women at a young age but not at an old age. Another study conducted by (Muhrini et al., 2012) found that the incidence of stroke was more in the male gender as many as 40 patients (52%) compared to the female gender as many as 37 patients (48%). In a study conducted by Prok et al, (2016), the incidence of stroke increases with age.

Revealed that age has a very strong relationship with the incidence of stroke. Stroke rarely occurs at age less than 50 years, but the risk of stroke increases twofold after age 50 years. Alfianto, (2015) also stated that the incidence of stroke will increase with increasing age, especially when entering the age of > 55 years, from the results of the study showed that non-hemorrhagic strokes were more at the age> 55 years. According to research conducted by Jayanti, (2015), the proportion of patients who have had a stroke in the age category> 40 years is greater than those aged <40 years.

Ha is accepted, so there is an effect of dhikr therapy. In the lower right limb, a significant value of 0.002 p-value <0.05, then Ho is rejected, which means that there is an effect of dhikr therapy. Lower left extremity significant value 0.004 p-value <0.05, so there is an effect after being given dhikr therapy. According to Amin & Haryanto, (2008), dzikir will increase the patient's confidence and courage to recover. Through dhikr, the soul is increasingly convinced of the greatness of Allah SWT, so that we can be brave enough to face anything.

The results of this study support the research that has been done by Prok et al., (2016) shows the difference in the average muscle strength between before and after active exercise gripping the ball is -3,500 with a standard deviation of 1.249. The results of the analysis obtained a p value of 0.000, which means that there is a very significant difference in the average muscle strength before and after hand exercise. Left lower extremity significant value 0.157, so there is no influence. Kumala et al., (2017) states that this dhikr relaxation therapy can be used to reduce physical, emotional, cognitive and behavioral tension that can lead to improved blood pressure. This dhikr relaxation therapy helps individuals to concentrate on the tension they feel and trains the individual to relax, in the control group that is not given dzikir therapy, calmness and feelings of relaxation are not maximally obtained so that it may affect the concentration of activity and muscle training.

This is supported by the opinion of Saleh, (2010) which states that the process of dhikr by saying sentences containing the letters jahr, such as tauhid and isthigfar sentences, increases the disposal of CO_2 in the lungs and also explained that when a person is doing dhikr, there is a shortening of the brain blood vessels due to a chemical response when someone is doing dhikr (Hawari, 1998). Blood supply (decreased oxygen and glucose levels) to brain tissue has decreased. This situation is immediately

responded to by the brain with a yawning reflex which massively brings oxygen through the lungs to the brain accompanied by a widening of the diameter of the blood vessels. As a result, the supply of oxygen and glucose to brain tissue increases rapidly. This condition will revitalize all cellular and microcellular elements which have an impact on the strength and viability of brain cells.

In addition to the supply of large amounts of oxygen, mitochondria as the center of cell respiration will return to activity and work normally. According Saleh, (2010) which reveals in the book "Dzikir for nervous health" which states that it can cure paralysis due to stroke, by dhikr in a calm state and a heart focused on the Almighty. Doing dhikr with finger movements and clear pronunciation, the clogged blood vessels will gradually be displaced and carried by the swift flow of blood, so that it can drain all extremities and the dhikr movement itself can train the movement of the muscles of the upper extremities.

CONCLUSION

The results of the analysis of muscle strength before and after giving dhikr therapy in the treatment group, using paired t-test, showed that there was an effect of dhikr therapy on muscle strength in non-hemorrhagic stroke patients with p-value <0.05. Whereas in the control group the results obtained p-value> 0.05, meaning that there was no effect of dhikr therapy on muscle strength in non-hemorrhagic stroke patients. The results of the mean difference analysis test in the control group and the treatment group, using the independent t-test, obtained a p-value <0.05, it was concluded that there was an effect of dhikr therapy on the muscle strength of non-hemorrhagic stroke patients.

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Original Research

Increasing Public Confidence In Accessing Public Safety Center-119 Services Through First Aid Training

Sunarto[1*], Addi Mardi Harnanto[2]

[1] Departement of Nursing, Poltekkes Kemenkes Surakarta, Indonesia

ABSTRACT

Background: *Emergency conditions in Indonesia can be caused by the vulnerability of disasters, accidents and diseases that threaten life or cause disability in humans. Emergency conditions require immediate assistance to prevent death and disability. The community as the first helper holds a very important key to the safety of individuals who are experiencing emergency conditions. Not all people are familiar with the PSC-119 service. The results of the preliminary study also showed that most of the respondents expressed lack of confidence because they had never received any socialization or training on how to provide first aid.*

Methods: *a form of experimental research with a pretest-posttest model, with intervention towards respondents related to actions in first aid training. Respondents in this study were 217 special lay people. The sampling technique in this study was random sampling by distributing invitations to special lay people in the city of Surakarta, consisting of members of the Voluntary Corps, health cadres and Linmas Kelurahan at Surakarta City. The data analysis technique used a t test*

Results: *There was an increase in the value between the pretest and posttest of 12.2 and the result of different test (t test) shows the value of Sig. (2-tailed) is 0.00.*

Conclusion: *There was an increase in community confidence in accessing PSC-119 services after first aid training was carried out for victims with significant emergency conditions.*

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CONTACT
Sunarto
✉
sunarto_sst@yahoo.com
Departement of Nursing, Poltekkes Kemenkes Surakarta, Indonesia
Jl. Letjen Sutoyo, Mojosongo, Surakarta

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INTRODUCTION

Emergency conditions in Indonesia can be caused by the vulnerability of disasters, accidents and diseases that threaten life or cause disability in humans. The Indonesian territory is geographically divided into islands, located at the junction of tectonic plates, namely the Asian, Australian, Indian Ocean and Pacific Ocean plates and in the southern and eastern parts of Indonesia there are volcanic belts (volcanic arcs) from the islands of Sumatra, Java, Nusa Tenggara and Sulawesi which its sides are old volcanic mountains and lowlands, making it very prone to disasters (Badan Nasional Penanggulangan Bencana, 2009) & (BNPB, 2014).

Emergency conditions require immediate assistance to prevent death and disability. First aid for individuals experiencing emergency conditions requires coordination starting from the pre-hospital environment and hospitals or other health care institutions. Based on the Minister of Health Regulation Number 19 of 2016 concerning the Integrated Emergency Management System (SPGDT), the government has established a service called the Public Safety Center 119 (PSC-119) to serve the community in emergency conditions. This service is carried out by the district, municipality or city government which aims to provide fast and integrated services so that it can reduce the mortality and morbidity rates for people who experience emergency conditions both that occur in daily life and during disaster conditions (Kementerian Kesehatan RI, 2016).

Based on the SPGDT concept, the PSC-119 service cannot stand alone without involving community empowerment as first responders. Community First Responder is an ordinary community that provides assistance in emergency conditions. The community as the first helper holds a very important key to the safety of individuals who are experiencing emergency conditions (Kementerian Kesehatan RI, 2018). Starting August 2016, the Ministry of Health launched the 119 emergency telephone service. This toll free telephone was launched to facilitate medical emergency services. The flow is that residents who encounter cases of health emergencies, such as accidents, can call by cellphone or landline and ask for assistance in sending medical personnel and fleets as needed.

Before getting help, residents will be connected to the operator of the National Comand Center (NCC) at the Ministry of Health Office. This operator will forward the information to the Public Service Center (PSC) operator with offices in districts / cities4. Not all people are familiar with the PSC-119 service. People who are familiar with PSC-119 services also do not necessarily have the courage and confidence to access these services through telephone lines. Most of the people still choose to contact the police or escort patients in emergency conditions directly to the nearest health service institution.

Based on the results of interviews in a preliminary study of 10 members of the public, especially from the corps who volunteered, the answer was that 4 people felt they had the confidence and courage to call PSC-119 while 6 people stated that they did not have the confidence to call PSC services. -119. The results of the preliminary study also showed that the majority of respondents expressed lack of confidence because they had never received any socialization or training on how to provide first aid, which included material for access procedures for requesting assistance to PSC-119 services. Based on an interview with the Head of the Health Service Section of the Surakarta City Health Office, PSC-119 has also conducted training and outreach in order to bring access to this service closer to the community. This study aims to analyse the effect of first aid training on the general public on increasing self-confidence in accessing PSC-119 services.

MATERIALS AND METHOD

A form of experimental research with a pretest-posttest model, with intervention towards respondents related to actions in first aid training. Respondents of this research is the general public in the city of Surakarta. The sampling technique in this study was random sampling by distributing invitations to the general public in the city of Surakarta which consisted of members of the Voluntary Corps, health cadres and Linmas

Kelurahan of Surakarta City. Of the 300 invitations given, 217 special lay people were willing to participate in data collection activities. The research instrument used was a questionnaire.

Content validity in consultation with 3 practitioners in the field of pre hospital emergencies was used to assess the suitability of this instrument with research objectives and respondent characteristics, and the results of this questionnaire were recommended to be used in this study. While the data analysis technique used a different test. The ethical clearance of this research was obtained from the Ethics Commission of Dr Moewardi Hospital with the number 827/VI/HREC/2020 dated June 30, 2020.

RESULT

All respondents involved in this study were 217 who had participated in full activities. There was an increase in the value between the pretest and posttest of 12.2 and the t test results showed the value of Sig. (2-tailed) is 0.00.

Table 1. The effect of first aid training on increasing community confidence in accessing PSC-11 services

Mean *Pretest*	Mean *Postest*	Selisih kenaikan	Nilai t	Sig. (2-tailed)
64,5	76,7	12,2	77,112	0,00

Table 1. Shows that there is an increase in the value between the pretest and posttest of 12.2 and the t test results show the value of Sig. (2-tailed) is 0.00, so it can be concluded that there was an increase in community confidence in accessing PSC-119 services after first aid training was carried out for victims with significant emergency conditions.

DISCUSSION

The results showed that integrated first aid training with direct instructors from the PSC-119 team could increase public confidence in accessing PSC-119 services. The first aid training materials delivered include the objectives and benefits of first aid for the safety of victims or survivors, the ease in carrying out aid communication, confidence in asking for services, the importance of the role of first responders in providing first aid, guidance services for PSC 119 to the community in implementing SPGDT and procedures requests for first aid if the first responders find survivors as well as first aid procedures given by rescuers while waiting for the ambulance to arrive.

Several studies examining this research, a study conducted by (Tawalbeh & Tubaishat, 2014) obtained results that the simulation method greatly affects students' knowledge and confidence in applying Advance Cardiac Life Support (ACLS) knowledge. Other evidence is that the short education session has a positive effect on increasing confidence of public to perform basic life support. Short teaching sessions have been proven to boost respondents' confidence in administering first aid to cardiac arrest victims in previous studies. Short first-aid training sessions can also boost self-esteem, allowing young people to believe they are capable of helping those who are undergoing a traumatic situation (Abelsson et al., 2020). Training also increases the confidence of schoolchildren aged from 14 to 18 years to perform the basic life support

at survey time-points. This study was gained to improve bystander CPR in community (Wingen et al., 2018).

The form of activities with the simulation method is effective to increase knowledge, skills, self-confidence and critical thinking skills. This activity is part of the soft skills that can be obtained when volunteering. Most of the respondents in this study is volunteers. Through some training programs, first aid competence among volunteers can be improved. This competence is important for volunteers to carry out their duties at the disaster and emergency site. Simulation that conducted regularly is essential to gain their first aid competence (Putri et al., 2020).

Introducing how to ask for help from the public safety center can be started from childhood. Most primary school–aged children, particularly those in kindergarten and first grade, are not equipped to respond to an emergency using a smartphone to telephone 9-1-1 and communicate the emergency to a dispatcher, according to a study involving fifty students. Furthermore, most kindergarten and first-grade students were unable to detect an emergency. Emergency education for elementary school students is usually provided through regional police school visits, and primarily consists of didactic teaching without simulated exercise or assessment, tactics that have been shown to improve skill transfer to real-life situations. (Huber et al., 2021).

CONCLUSSION

There was an increase in community confidence in accessing PSC-119 services after first aid training was carried out for victims with significant emergency conditions.

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Original Research

Sensitivity And Specificity Numerical Range Scale-Competency (Nrs-C) In Emergency Care

Heru Suwardianto[1*], Santi Angraini[2]

[1] Department of Emergency and Critical Nursing STIKES RS Baptis Kediri, Jawa Timur, Indonesia
[2] Intensive Care Unit, Baptist Hospital in Kediri, Jawa Timur, Indonesia

ABSTRACT

Background: *Emergency conditions always occur every day around us, and the delay in aid makes the condition getting worse after arriving at the emergency department. Emergency competency assessments that continue to develop ensure increased competence for students to further increase student awareness of emergency conditions. The research objective is the development of the Emergency Sensitivity and Specificity Range Scale Competency (NRS-C) for Emergency Services*

Methods: *Observational analytical research method using secondary data competency assessment of 101 respondents who have done daily emergency training. Inclusion criteria, namely high school students' class XI and XII. The sampling technique used is random sampling by taking randomly (single blink). Data were analyzed using the Receiver Operating Curve (ROC Curve).*

Results: *The results showed that most respondents were 16 years old (41%), and have a female gender (54%). The results showed that the sensitivity value was 84% and the specificity was 16%, with an AUC Area value of 0.794, and p=0,001, which means it has a fairly good AUC value.*

Conclusion: *The NRS-C instrument can be used in the emergency department competency assessment which is quite good in assessing the competence of an emergency department..*

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CONTACT
Heru Suwardianto
✉
herusuwardianto@gmail.com
Depatemen keperawatan gawat darurat dan kritis STIKES RS. Baptis Kediri, Jl Mayjend Panjaitan, No. 3B Kota Kediri, Jawa Timur, Indonesia

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INTRODUCTION

The training at the school level will improve emergency cycle preparedness in their environment. There are various benefits of cyclic emergency training such as encouraging a healthy lifestyle, developing social and leadership skills and improving academic performance (Post et al., 2019). Most of the time they are in buildings, and they have a sizable community at the school. Health workers must be active in carrying out education as well as high school level training with various training in emergency management in daily life. The training must also be measured accurately and also seen

from various assessment indicators so that the expected competency results can be achieved after the training is carried out.

Emergency training in schools is still lacking and not so common (Schildkraut & Nickerson, 2020). Emergency training in schools can be carried out for several days and the results of many studies also report that perceptions of student preparedness have increased significantly. The results of previous studies showed that there was an increase in the application of procedures by 27% from previous training related to emergency management in schools (Schildkraut & Nickerson, 2020). The results also showed that emergency training in schools related to cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) resulted in a positive response rate of 11.7% of respondents (Busick, 2016; Scarneo-Miller, Kerr, Adams, Belval, & Casa, 2020; Trump, 2018). The evaluation results also showed that after the training they implemented it more often (95.5%) than those who did not.

Identification of all emergency factors in the environment is very important because it may be that every school has different needs for emergency procedures. Schools support the implementation in providing facilities and also the need for training implementation is very important in its implementation. Preparedness for the occurrence of emergency conditions must be increased as part of victim prevention in case of emergency conditions or preventing worsening conditions at school. One of the assessment indicators, namely indicators of emergency preparedness and awareness, selected through literature, is classified into four components, namely circulation and emergency evacuation, support and assistance, communication, and search and rescue (Khan, Rana, Nawaz, & Waheed, 2020). The development of emergency training competency assessment tools continues to be developed professionally by emergency nurses in increasing competency and measurement accuracy.

Education can be done face-to-face or online in continuous learning and improve the quality of education that continues to develop. NRS-C is an emergency competency assessment in assessing several assessment indicators that are continuously being developed to see their effectiveness

MATERIALS AND METHOD

This study was observational analytic with a cross-sectional design, measuring the competence of the emergency department with Numeric Range Scale Competency (NRS-C). The research objective was to determine the sensitivity and specificity of the Numeric Range Scale Competency (NRS-C). As a competency measuring instrument. The target sample is secondary data from the results of taking daily emergency training competencies for high school students in Kediri City from 2019 to 2020 with a total of 101 high school students. The research was conducted in September 2020.

The inclusion criteria were high school students in class XI and XII. The sampling technique used is random sampling by taking randomly (single blink). The researcher randomized the data whose competency scores were taken by the enumerators. The instrument used as a standard in the study was the Numeric Range Scale Competency (NRS-C) which was used to assess competence after daily emergency training for high school students. NRS-C is an assessment range between a score of 0 to 10 with a meaning of 0 very bad and 10 very good, the assessment is divided into sub-variables, namely knowledge, understanding of the purpose of action, procedures, and vigilance.

The process of collecting assessment data with direct guidance to the assessor goes together and ends with a joint assessment by the assessor. Researchers involved 5 remunerators, namely nursing students. Statistical tests used Relative Operating Characteristics (ROC) and Area Under Curve (AUC). Sensitivity pays attention to conditions of good scores, while sensitivity is more concerned with low scores that tend to be negative. The point of interest in this study is to see the ability of the index to detect positives and negatives in subjects, with the psychological limit of AUC is 0.5. The number of Ethical Clearance 017/09/IX/EC/KEPK/Lemb.Candle/2020 from KEPK Lembaga Chakra Brhamanda Lentera with Kodefikasi Kelembagaan Komisi Etik Penelitian dan Pengembangan Kesehatan Nasional Kementerian Kesehatan Republik Indonesia are 3506023S.

RESULTS

Tabel 1. Distribution Frequency of Demographic data Respondents

Demographic data	Frequency	Percent
Age		
14 Years old	2	2,0
15 Years old	33	32,7
16 Years old	42	41,6
17 Years old	15	14,9
18 Years old	9	8,9
Gender		
Male	46	45,5
Famale	55	54,5

Based on the tabel 1, it was found that most respondents were 16 years old, amounting to 41%. Most respondents have female gender, namely 54%, while the female gender is 46%.

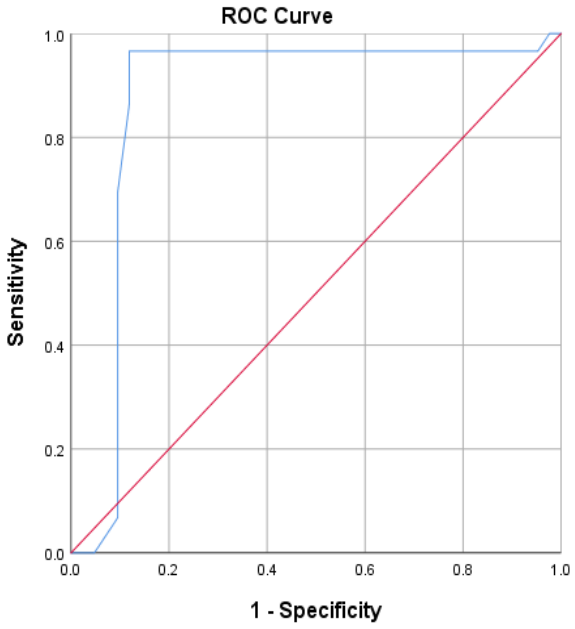

Figure 1. ROC, Sensitivity and Specificity Curve

Based on the results (Figure 1) of the ROC curve, the sensitivity of the AUC is around 84% with a false positive rate of 16%, which means that the NRS-C instrument has the right ability to assess competency. AUC is considered good if> 50% and AUC results. NRS-C can predict the ability of trainees after daily emergency training. The results also show that the AUC area is 0.794, where the closer to number 1, the better the value. The results also showed an AUC value of p= 0.001.

DISCUSSION

Sensitivity and specificity values are needed to assess competency assessment instruments. The NRS-C sensitivity value of more than eighty percent indicates that the AUC has a good value. The assessment of these instruments is expected to be used in emergency competency assessments. NRS-C has cognitive and psychomotor assessment abilities that have reliability and validity between instrument gauges. This assessment instrument can be used in measuring the competencies that have been done.

NRS-C focuses on cognitive about everyday emergency conditions, explanation of the purpose of action, action procedures, to the alertness of helpers in carrying out assessments. Under the conceptual theory, namely the breeding of specific training and good assessment will be able to measure the quality of good competencies and have a positive perception of students (Aini, 2019; Januarista, 2019; Suwardianto, 2015, 2018; Watung, 2021). Management in an emergency department needs to be continuously developed and applied in various agencies, and assessment management and measurement standards must continue to be developed, as well as training because more than thirty percent of students forget the knowledge that has been taught and about twenty-nine percent forget what has been done in emergency action (Cheng et al., 2019; Kerr, 2019).

This assessment has shown good things in measuring emergency competence. The advantage of using NRS is that it is easy to do and also ranges from 0 to 10 by using the assessed sub-variables. NRS-C has a good ability to assess the good abilities of participants. Daily emergency competency training is very important for high school students to learn to equip them to anticipate and help in the event of an emergency (Agustini, Suyasa, Wulansari, Dewi, & Rismawan, 2018; Prastiwi, 2019; Romadoni & Ardianty, 2018). The training explains the understanding of knowledge of emergency conditions during daily conditions, furthermore, it also provides an understanding of the purpose of each action having certain benefits and rationale in its implementation. The training also provides competencies related to the procedure for actions taken so that what is done is under the procedure that should be done or is under the standards that should be.

Training is important to equip students in the prevention of accidents inside the school and outside of school, as well as planning for alertness and capacity building for students to improve to get good perceptions and increase in students (Murata, Scarneo - Miller, McMahon, & Casa, 2020; Olympia, Weber, Brady, & Ho, 2017; Pelto & Drezner, 2020). This is also supported in research that students need to be provided with support in emergency training with various methods that are under environmental, socio-cultural conditions so that competence can be accepted and they can carry out these procedures properly or according to the standard procedure of action (Archer & Hughes, 2011; Suwardianto & Rimawati, 2018). Senior high school students need to understand day-to-day emergency action with the hope of becoming a cadre in their environment because more than eighty percent of emergency events occur outside

health facilities such as hospitals or clinics. Emergency events mostly occur in families and communities, and most times when they are brought to the emergency department it is too late or the condition is so severe that it cannot be saved.

Competency assessment after daily emergency competency training needs to be assessed correctly. One of the means is to use the NRS-C to assess the competence that has been given is sufficient for them to carry out daily emergency management actions. High school students play an active role in the implementation and also become the main cadres in the youth and family environment in making decisions. Daily emergency actions or first aid can be done before the health team comes to help or the victim is taken to a health facility such as an emergency room or hospital. NRS-C is expected to be able to guarantee that the score given is relevant and one of the measuring tools that can be expected to measure student competence in carrying out daily emergency actions.

This research needs to continue to be developed because it has limitations, namely the subject is still not homogeneous with the existence of several subjects who have different class and age levels and the need for standard values in comparing other tools that may need to be done.

CONCLUSION

The NRS-C instrument can be used as an instrument in a simple efficient emergency competency assessment without adding other variables which are sometimes quite a lot and minimizing assessment errors and misperceptions.

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Original Research

Psychological Distress And The Sleep Quality In Older Patients With Chronic Disease

Yodang Yodang[1], Akbar Harisa[2*], Syahrul Syahrul[3]

[1] Faculty of Science and Technology, Universitas Sembilenbelas November Kolaka, Indonesia
[2,3] Faculty of Nursing University of Hasanuddin, Indonesia

ABSTRACT

Background: *The prevalence of chronic disease in elderly increase year by year worldwide and it's related to mortality and decrease of quality of life. The majority of elderly patients complaints about sleep disorders and that affects sleep quality, health status and quality of life. Psychological aspect was identified as one main contributor in sleep disorders among elderly who suffer from chronic disease. This study aims to determine the effect of psychological distress on sleep quality among elderly patients with chronic disease.*

Methods: *This study applied a quantitative research design with cross-sectional approach. The study conducted in a teaching university hospital from October to November 2021. Population is elderly with chronic diseases, the participants selected by using total sampling method. Data collection using psychological distress related questionnaire and Pittsburg Sleep Quality Index (PSQI). Data analysis applied Fishers' Exact test.*

Results: *There are 52 older patients participate in this study. The study finding 85.6% participants have psychological distress and 51.9% have poor quality of sleep. Based on Fishers' Exact test analysis, the p-value was 0.308 (statistically insignificant).*

Conclusion: *This study finding report that psychological distress statistically has no significant affect on sleep quality among elder patients who suffer from chronic disease. However, some participants have poor sleep quality. Study in advance to investigate how psychological status affect sleep quality is needed.*

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CONTACT
Akbar Harisa
✉
akbar.harisa.unhas@gmail.com
Fakultas Keperawatan, Universitas Hasanuddin, Jln. Perintis Kemerdekaan KM. 10 Tamalanrea, Makassar, Indonesia.

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INTRODUCTION

Sleep is an essential component for health and wellness across the lifespan (Miner & Kryger, 2017), and an important component for establishing a proper physical, mental, and emotional wellbeing of an individual (Fermina & Revathi, 2017). Many older people were challenged with a chronic or multiple chronic conditions, depression, pain, physical function limitation, and cognitive impairment (Hughes et al, 2018). Even

though, sleep problems or sleep disorders, including sleep disordered breathing and insomnia disorder (Lavoie, Zeidler & Martin, 2018), are common among general population. However, the factor was contributed to increase risk for sleep problem is insomnia, and it brings negative effect on sleep quality (Zhang et al, 2017).

Aging is characterized by significant physiological alterations in the human body (Pires et al, 2021). From a neurological and endocrinal perspective, there are a lot of potential factors that can impair sleep such as neurotoxin deposition, blood brain barrier dysfunction, and local small vessel disease (Mc Carthy, 2021). Sleep deprivation is harmful to immune, metabolic, cardiovascular health, and cognition and memory (Kessler et al, 2019). These effects may be more significant in older people who may have pre-existing vulnerabilities. Despite the associations between sleep dysfunction and adverse outcomes among older people, the impact of sleep disturbances on older hospitalised patients is remainly unclear (Mannion, Molloy & O'Caoimh, 2019).

Sleep quality affects health status and quality of life. There are some factors were identified which associated with poor sleep quality such as age, physical condition, self-esteem, work characteristics, unhealthy diet, and others (Pérez-Fuentes et al, 2019). Changing in sleep quality is a part of normal aging, both in terms of decreased in duration and consolidation (Landry, Best & Liu-Ambrose, 2015). Sleep complaints were common in older adults where more than a half of older adults being an inability to stay asleep at night. The poor sleep quality was associated with worsening health status, increased risk of mortality, increased health care admission, increased hospital length of stay, and increased the psychological distress.

A study conducted in China reported that abnormal sleep was associated with psychological distress such as depression and anxiety (Fu, Zhou & Meng, 2020). Further, Fu and colleagues emphasized that sleep duration is a predictor of anxiety, and inadequate sleep is a leading factor to depression. Thus the psychological distress may mediate the sleep quality in older patients with chronic disease. In terms of sleep quality, it's a complex construct, making it difficult to evaluate empirically, and that depends on the methods used to quantify parameters of sleep quality (Landry, Best & Liu-Ambrose, 2015). Further, during some decades the sleep quality was assessed using various methods both subjective and objective measures. The most common instruments used to assess sleep quality were Pittsburg Sleep Quality Index (PSQI).

Since the lack of evidence in Indonesian context related to sleep quality among older patients particularly them with chronic disease, this study aims to identify the relationship and effect of psychological distress on sleep quality among older patients who suffer from chronic disease.

MATERIALS AND METHOD

This study applied descriptive study with cross-sectional design. The study conducted in a teaching university hospital in Makassar, South Sulawesi Province during two months from October to November 2020. Population is all older patients, and the participant selected using purposive sampling method. There were 52 patients meet all inclusion criteria of the study.

All participants were recruited meet inclusion criteria such as patient, who attend inpatient care, have a chronic disease (conditions that 1 last year or more and require ongoing medical attention such as hypertension or diabetes mellitus), age ranging from 60 years old and above, intend to participate in the study. While exclusion criteria were

patients with decrease level of consciousness, have a communicable disease, and dementia.

All participants were assessed their psychological distress by using a psychological distress-related questionnaire, and sleep quality assessed by using Pittsburg Sleep Quality Index (PSQI). These questionnaires already adapted and validated into Bahasa Indonesia (Khasanah & Hidayati, 2012). This study procedure already approved by Ethical Commission for Health Research of Faculty of Medicine, Universitas Hasanuddin with registration number 547/UN4.6.4.5.31/PP36/2020.

RESULTS

The study result will explain into some sections, which are the socio-demographics of the participants, measurements of psychological distress and sleep quality measured by using Pittsburg Sleep Quality Index (PSQI). Older patients with chronic diseases which recruited in this study have age from 60-78 years old, mean 64.86 years old and SD 4.81. The detail socio-demographics of the respondents see table 1.

Table 1. Socio-demographics of older patients with chronic diseases

Characteristics	Range	Mean	SD	Frequency (n)	Percentage (%)
Age	60-78	64.86	4.81		
Group of age					
60-64				29	55.8
> 64				23	44.2
Gender					
Male				21	40.4
Female				31	59.6
Education level					
Primary				26	50
Secondary				18	34.6
Tertiary				8	15.4
Occupational					
Unemployed				26	65
Farmer				4	10
Business				8	20
Property labor				2	5
Marital status					
Married				29	55.8
Widow/widower				23	44.2
Psychological status				8	15.4
Mild distress				44	85.6
Severe distress					
Sleep quality					
Good				25	48.1
Poor				27	51.9

The majority respondents in study were 60-64 group of age (55.8%), predominantly female (59.6%), have primary educational background (50%), occupational status

with unemployed (65%), married (55.8%), have psychological distress with severe level (85.6%), and have poor sleep quality (51.9%).

Table 2. Correlation psychological status and sleep quality

Psychological status	Sleep quality		CI (95% L-U)	p-value
	Good (f/%)	Poor (f/%)		
Mild distress	5 (9.6)	3 (5.8)	0.425-9.418	0.308[a]
Severe distress	20 (38.5)	24 (46.2)		

[a] Fisher's Exact test p-value = < 0.05

Based on Fisher's exact test the p-value = 0.308 (CI = 0.425-0.9418), it means that there is no affect of psychological distress on sleep quality among older patients who have chronic disease. Odds Ratio for Mild distress was 1.375 for good sleep quality compare to severe distress.

DISCUSSION

This study reports that both group of ages have similar prevalence in poor of quality of sleep, its mean that there is no significant difference between group of age of elderly and sleep quality. However, in previous study justify that sleep pattern change as individuals' age (Saccomano, 2014). Further, changes in sleep patterns of elderly may correlate to some aspects such as have chronic disease, and changes in daily routine.

Other scholar also explained that sleep quality and sleep disturbance increase with age, and the incidence of the sleep disturbances is higher than 50% in community dwelling older population (Stefan et al, 2018). Another evidence also proved that both subjective and objective measurements result of sleep indicate that sleep changes with increasing age (Crowley, 2011). So, majority of researchers considered age as a considerable risk factor of sleep disorder (Zhang et al, 2017).

In terms on gender, women were predominantly in this study, which counted for around 60%. However, there prevalence in poor sleep quality was higher among older men than older women (28.8%: 23.1%). In contrast, a study from China, which investigated the sleep quality among older adults who living in rural area reported that poor sleep quality, was significantly associated with female sex. According to multiple logistic regression analyses revealed that sex and clinical comorbidities such as hypertension, coronary heart disease, and chronic obstructive pulmonary disease were positive predictors on sleep quality (Wang et al, 2020).

This study also was disagree with the study from Iran, which the study focus on association of sleep quality and socio-demographics characteristics in elderly referred to health centers, found that older women had worse sleep quality compared to older men (Dehghankar et al, 2018). However, the study concluded that there is no difference between older women and older men in sleep duration, habitual sleep efficiency, and sleep disturbances. In regards of educational background, this indicated that the educational background of participants has no significant difference on sleep quality. Iranian scholars supported it, where their study also found that there is no significant difference between education status of the elderly and their sleep quality. However, the study also reported that the elderly with lower education had poorer sleep quality (Dehghankar et al, 2018).

Based on occupational status, mostly of participants were unemploy or retirement rated on 65%. American scholars justify that when people retire, they often take the liberty to stay up late at night or take naps at odd times (Khawaja & Aslam, 2018).

Further more, this lack of structure often leads to a breakdown in the sleep pattern, resulting insomnia at night and day time sleepiness.

A study conducted in China which the older residents who living in nursing homes were recruited found that there was siginificant difference between elder with poor sleep and elder with good sleep, based on marital status (Zhu et al, 2020). Further, the study point out that elders who have poor sleep quality seemingly those who had older age, lower education, and unstable marriages. The reason why unstable marriages may contributes to poor sleep quality, due the lack of family support (Kumar et al, 2019). However, this study finding there is no significant difference in prevalenc of poor sleep quality between married and widow or widower participants.

However, in contrast a study conducted in Turkey, reported that elderly who suffer from diabetes mellitus with macro-vascular comorbidity had poorer sleep quality. The elderly who have macro-vascular problem not only have poor sleep quality but depression as well (Ozturk et al, 2015). Besides that, this study point out that the duration of diseases progression also has an important impact on both sleep quality and depression. In general, psychological factors were identified may promote sleep disturbances such as retirement, isolation, loneliness, bereavement or grief, and emotional issues, depression and anxiety (Allen et al, 2013). However, this study focus only on psychological-related issues on depression, this investigation may affect the final result of this study.

According to Canadian scholars, they point out that various type of psychiatric problems have been associated with sleep disturbances in the elderly. Depression has sometimes been noted, and is considered a risk factor of sleep difficulties. It has been linked to low sleep efficiency and poor quality of sleep (Leblanc, Desjardins, & Desgagne, 2015). Advanced age-related changes in sleep patterns may be linked depressed mood in elderly. The short and long of sleep durations were also associated with increased risk of depression in adult (Gulia & Kumar, 2018). However, the evidence on how sleep durations affects depression, vice versa is still lack. Further, the latest evidence indicated that sleep disturbances not only precede the depression, but are also associated with increased risk for depression both cross-sectionally and longitunally (Gulia & Kumar, 2018).

CONCLUSION

It was concluded that the psychological status has no affect on sleep quality among elderly who hospitalized with chronic disease. However, due to the lack of participants that may have affect to final result of this study. Besides that, some risk factors are uninvestigated this also may covers the quality of sleep among the elderly patient with chronic disease. In order to improve the evidence, increasing number of participants and put all risk factors into account is needed.

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Original Research

Audio Hypno-Analgesia Intervention Effect On Pain Levels During Wound Treatment At JR Care Nursing Practice

Hanung Prasetya[1*], Heryyanoor[2], Annisa Febriana[3]

[1] Department of Acupuncture, Poltekkes Kemenkes Surakarta
[2,3] Department of Nursing, STIKes Intan Martapura

ABSTRACT

Background: *Efforts to minimize pain and discomfort include the provision of hypnoanalgesia complementary therapy interventions with additional hypnosis audio hypnoanalgesia methods that cause a feeling of relaxation in patients during wound care. This study analyzed the effect of audio hypnoanalgesia on pain levels in wound care.*

Methods: *Quasi-experimental research using a random control trial was conducted at the JR Care Independent Nursing Practice, Banjarbaru from January to December 2020. The population was 120 patients with total randomization of 60 subjects from the treatment group and 60 subjects from the control group receiving standard care. The independent variable is audio hypnoanalgesia, while the dependent variable is the level of pain. Hypnoanalgesia was performed using hypnosis recordings/audio while pain level was measured using a numerical pain scale of 0 to 10. Data analysis used an independent t-test. The effect of the treatment was seen from the difference in the level of pain before and after being given treatment.*

Results: *Subjects experienced a significant decrease in mean pain in the treatment group from a mean of 4.95, SD = 0.67 before treatment to a mean of 0.13, SD = 0.34 after treatment, effect size 0.97 using Cohen's formula and statistically significant (p = 0.000) which means the administration of audiohypnoanalgesia has a positive effect on reducing pain levels.*

Conclusion: *Hypnoanalgesia audio therapy can be used to minimize patient pain during wound care.*

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CONTACT
Hanung Prasetya
✉
hanungprasetya168@gmail.com
Department of Acupuncture, Poltekkes Kemenkes Surakarta. Letjen Sutoyo, Mojosongo, Surakarta, Indonesia.

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INTRODUCTION

Getting wounded is not something we can't avoid sometimes. There must be several occasions in our lives as humans when physical trauma occurs. Wounds are tears or damage to the skin (Arisanty, 2013). Wounds are damage to the structure and

function of normal skin anatomy as a result of internal or external pathological processes that affect certain organs (Lazarus, et. Al, 1994).

Wound needs to be properly treated to ensure faster healing. The steps taken are starting to clean the wound to reduce the number of bacteria in the wound area. The pain sensation from a wound is caused by tissue damage of the skin. It can also be caused by wound treatment procedure such as wound cleaning, wound dressing change, and debridement. Treatment for a wound may cause an unbearable pain. The health practitioner who treats the wound cannot assess the intensity of the pain because pain is a subjective experience.

Based on the preliminary data that were collected in the past 6 months, Praktik Keperawatan (Nursing Practice) JR Care Banjarbaru tends 75 patients on average each month. Health practitioners of JR Care have treated various kinds of wound such as gangrene, post-surgery wounds, and accident wounds. Pain is an unpleasant sensory and emotional experience. Each individual has their own experience with sensations of pain, perception of pain, and emotional response to pain. The levels of pain reported by JR Care patients range from 2 to 7 in 0–10 pain rating scale, which means they experienced mild to moderate pains during their treatment. It is undeniable that safe and quick wound treatment with manageable pain is desirable for patients.

Fortunately, there have been favorable advances in wound care that are supported by rapid development in healthcare technology. Nowadays, various methods of preventing wound treatment from being painful are available. Hypnotherapy is one of them. This method is a kind of mind-body therapy that can guide the patient into a deep trance-like state, induce certain mental imagery and deliver therapeutic suggestions to his subconscious mind. Hypnotherapy is commonly employed to heal mental disorders and relieve physical trauma (Arter, 2014). Hypnosis can modify various sensations, perceptions, thoughts, feelings and behaviors through powerful suggestions.

The human brain that has been targeted by suggestions would immediately instruct the central nervous system to stimulate reticular activating system (RAS) so as to make it slow down its performance which is followed by the release of serotonin from specialized cells in the pons and the brainstem, which is the area of the brain that is called bulbar synchronizing region (BSR) (Lichtor, Terry, 2013). When a patient is in a relaxed state and his RAS's activity decreases, BSR will take over and he will fall asleep (Potter & Perry, 2005). Positive suggestions given to a patient that is in the state of hypnosis have the power to make him perceive or behave according to those suggestions.

Hypnotherapy for wound treatment focuses on the emotional aspect and the dynamics of the subconscious mind. Since pain is subjective, hypnotherapy for this purpose is basically aimed at pain relief. This specific use of hypnotherapy is often called hypno-analgesia. It is a non-pharmacological intervention for pain management that can be performed by a nurse. Based on its function, hypno-analgesia can be categorized as anodyne hypnosis (Prasetya, 2018). The essential part of hypno-analgesia is the power of suggestions or perceptions in inducing positivity as a form of mental conditioning that aims to give the positive energy that one needs to do a given activity.

This method of hypnosis is expected to result in the lessening or alleviation of pain that has been caused by physical trauma (Amarta, 2012). Audio hypno-analgesia is administered to ensure the patient's comfort during wound treatment and the nurse can focus on his/her task. Despite its benefit, according to Prasetya (2018), hypno-analgesia for pain management in wound treatment is still a rare option, particularly in Indonesia.

Many people in the country still think that hypnosis is a paranormal activity and is associated with crime, while in fact it is based on science and has been recognized as a safe method of therapy by WHO.

MATERIAL AND METHOD

The present research was designed as a quasi-experimental research and was supported by a random control trial method. It was conducted at Praktik Keperawatan Mandiri (Independent Nursing Practice) JR Care, Banjarbaru. The population of the research included all of the patients who had been admitted for wound treatment at JR Care from January to December 2020. The population was 120 patients with total randomization of 60 subjects from the treatment group and 60 subjects from the control group receiving standard care.

The patients that were invited to participate in this research are those who fit the following inclusion criteria: able to communicate in Indonesia language, having normal hearing ability, and willing to receive audio hypno-analgesia while having a wound care. In that case, the exclusion criteria were: having a hearing impairment and not willing to receive audio hypno-analgesia while having a wound care. Pain levels were measured by numerical pain rating scale of 0 to 10. Pain level was the dependent variable, and audio hypno-analgesia was the independent variable.

Audio hypno-analgesia in this research is a complementary therapeutic intervention that uses pre-recorded audio for patients undergoing wound treatment. The intervention process begins with the patient's consent then is given audio hypnoanalgesia which has been recorded using an audio player and sound system from the start of the wound care process to completion with an average time of administration of 30-45 minutes.

Hypno-analgesia for the patients of JR care was performed by playing the audio recording from which the patient can listen to suggestions that guide him/her into relaxation. The audio was pre-recorded on MP3. Pain level indicates the intensity of an uncomfortable feeling or condition caused by wound treatment. Different levels of pain among the patients of JR Care undergoing wound care were measured before and after treatment.

The measurement data were then analysed by running a t test on them in SPSS. Subjects that meet all the inclusion criteria were informed about the purpose and the benefits of hypno-analgesia. They were also assured about their anonymity and briefed about how to give answers to the questions on the questionnaire. All of the subjects have given signed consent on their participation in the research. Clearen's ethical letter number LB.02.02/1.1//2398/2021

RESULTS

The subjects were diverse in educational background, socioeconomic status, religious belief, environmental settings, and types of wound or injury. The period of data collection was the time span during which the patients were treated at JR Care. The result of the observation of 60 subjects from the control group and 60 subjects from the treatment group is presented in Table 1. Univariate analysis on their data describes the general characteristics of the sample for each variable that include age, education, and occupation. It is also laid out in Table 1.

Table 1. General Characteristics of the Subjects

Variable	Control		Treatment	
Education	**N**	**%**	**N**	**%**
Middle school (SMP)	11		8	
High school (SMA)	41		43	
University/college	8		9	
Total	**60**	**100**	**60**	**100**
Occupation				
Housewife	12		8	
Farm laborer/ farmer	6		12	
Entrepreneur	7		13	
Private sector employee	24		31	
Students	2		0	
Government employee	7		5	
Member of the Indonesian National Armed Forces (TNI)/ Indonesian National Police	2		1	
Total	**60**	**100**	**60**	**100**

Bivariate analysis was performed to examine the mean difference between the independent and dependent variables for which independent t test is applied. The resulting data from the test of different pain levels for the treatment group whose members received audio hypo-analgesia intervention and for control group whose members received standard treatment are provided in Table 2.

Table 2 shows that there was no significant difference in pain level between the control group and the treatment group before audio hypno-analgesia intervention was performed. In other words, the difference is statistically insignificant ($p = 0.797$). The resulting values reflect the fact that the randomized grouping of the participants into audio hypno-analgesia and non-audio hypno-analgesia has made two comparable groups in terms of the pain level before hypno-analgesia intervention.

Table 2. The mean difference in pain level between audio hypno-analgesia group and non-audio hypno-analgesia group before intervention from the t test

Group	N	Mean	SD	p
Audio Hypno-analgesia	60	4.95	0.67	0.797
Non-audio hypno-analgesia	60	4.90	0.74	

Table 3 informs that the pain level of audio hypno-analgesia (treatment) group is lower (Mean = 0.13; SD = 0.34) than non-audio hypno-analgesia (control) group (Mean = 4.57; SD = 0.53). In conclusion, the difference is statistically significant ($p < 0.001$). This means that there is an effect of giving hypno-analgesia audio in minimizing the level of pain during wound care. This finding (from RCT) suggests that hypno-analgesia was effective in relieving pain experienced by the patients who were being treated for their wound at Praktik Keperawatan JR Care Banjarbaru.

Table 4. The mean difference in pain level between audio hypno-analgesia group and non-audio hypno-analgesia group after intervention

Group	N	Mean	SD	P
Audio hypnoanalgesia	60	0.13	0.34	< 0.001
Non-audio hypno-analgesia	60	4.57	0.53	

The measurement of the effect of audio hypno-analgesia intervention on the pain levels of the patients who underwent wound treatment is 0.97. According to Cohen's effect size interpretation, any value between 0.8 and 2.0 indicates a strong effect. Thus, it can be inferred that audio hypno-analgesia intervention can contribute significantly to the decrease in pain intensity in patients undergoing wound treatment.

DISCUSSION

The present research relies on independent t test to examine the effects of audio hypno-analgesia on subjects in the control group and treatment group. The values in Table 4 implies that patients who received hypo-analgesia intervention show lower mean of pain level compared to those who received standard treatment. This means that there is an effect of giving hypno-analgesia audio in minimizing the level of pain during wound care.

This result supports the theory that mind programming that is performed by means of affirmations and suggestions during hypnotic trance can be a starting point for perception changes (Beneditis, 2015). Hypnosis begins when the hypnotist focuses the subject's attention and puts him/her into relaxation through induction and deepening techniques (Daitch, 2018). Placebo effect occurs when the subject responds to a medication or medical intervention that is driven by the expectation that the medication will actually work for him/her. This accepting response or the willingness to receive the medication is always a positive start.

The patient's optimistic attitude towards complementary therapy increases the efficacy of audio hypno-analgesia intervention. In many cases, the more the patient is informed about the intervention's effectiveness, the higher the effectiveness of the intervention will be. Patients who are told that a particular intervention would reduce their pain are highly likely to actually experience the reduction of pain compared to the patients who are told that the intervention would produce no significant effect on their pain. In addition, positive patient–nurse relationship also play important role in increasing the placebo effect (Smeltzer & Bare, 2002).

Audio hypno-analgesic therapy is effective in modulating pain perception because of its positive effect on the patient's cognitive processes during wound treatment. The subconscious mind is the part of human mind that stores all of our beliefs and values. It controls all of the body's functions. According to Kihlstorm and Prasetya (2018), hypnosis for analgesia is largely mediated by cognitive processes instead of physiological processes. The efficacy of hypnosis for analgesia is not associated with the increase in beta endorphine level (Spiegel & Albert, 1983 via Kihlstorm,1984).

Hypno-analgesia is presumed to have the ability of inhibiting conscious awareness by activating the limbic system inside the cerebral cortex. As a result, the transmission of pain impulse from the thalamus to the cortical areas is hindered. Another theory explains that audio hypno-analgesia reduces pain by delaying the activities in the anterior cingulate cortex instead of directly affecting the cortical activities. The

suggestions, delivered during the hypnotic trance, guide the patient to a deeper relaxation, change the nature of pain, and alter the patient's attitude towards pain so as to create a more positive experience during with wound treatment.

The research process was carried out with the patient's consent. Then the patient was listened to audio hypnoanalgesia at the wound care stage. The majority of patients said they were happy and more relaxed when they listened to hypnoanalgesia audio. According to Prasetya et. al (2018) and Iserson (2014), under hypnosis, the cerebral cortical function is inhibited, and consequently, the capabilities to identify, analyze, and decide on the new stimuli are greatly impaired. Therefore, during hypnosis, the brain cannot use previous experiences and so the hypnotist's suggestions become the dominant power.

Through active guidance, the hypnotized patient's condition and behavior can be controlled. In this way, the patient's psychological or physiological problems can be eliminated or treated. Nevertheless, it should be kept in mind that the hypnotherapist's capability of guiding hypnosis the session still plays a very important role in achieving the desirable response from the patient.

CONCLUSION

This research demonstrates that audio hypno-analgesia as a complementary therapeutic intervention is effective in modulating patients' pain perception during wound treatment. Patients who receive the treatment experience a reduction in pain level more than those that do not receive the treatment. Hypnoanalgesia audio therapy can be used to minimize patient pain during wound care.

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