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**ORIGINAL RESEARCH**

## AN ELDERLY'S PERSPECTIVE ON THE IMPACT OF SPIRITUALITY TOWARDS DEATH ACCEPTANCE

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**Abstract**

**Objective:** This study explored the religious or spiritual beliefs and behaviors of the elderly that could somehow translate to their level of death acceptance or lack thereof.

**Methods:** A total of four (4) elderly participants, ages 60 and above whom meet the criteria set for this study was interviewed to assess their spiritual upbringing and experiences that resulted to their death acceptance. The study involves qualitative approach using thematic analysis. The narrative testimony of the old adult participants in this study which includes cases of older adult that believes in God, older adult having shifted from one religious organization to another, and older adults' instilled spirituality comes from religious imprint from family members during childhood describes the three important patterns in the religious or spiritual standing of the participants.

**Results:** The themes signified that (1) older adults are inherently religious and this nature is a subsequent factor in (2) their faith in God basing on their life experiences and life's meaning. Furthermore, this (3) belief or faith in God offers them a sense of security and hope in the afterlife.

**Conclusion:** These themes explain the pattern in the creation of a religious/ spiritual standing that leads to death acceptance among participants as evident in their interview results.

**KEYWORDS**

elderly; Filipino; qualitative; spirituality; thematic analysis

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### INTRODUCTION

The Philippines is home to predominantly Christian religions, over 86% of the citizens in the Philippines are Roman Catholics while 9% practice different Protestant denominations (Miller, 2019). Religion here is more than a belief system of faith. Religion is often related to multifaceted life experiences, culture and tradition that define one community and race. This can define a country in its socioeconomic and political stance.

Religion and spirituality maybe similar but also have different meanings and descriptions. Religion is often regarded as more institutionally based, more structured, and more traditional and may be associated with organized, well-established beliefs, whereas spirituality as defined broadly pertains not confined to any group or denomination. Spirituality can also mean an emotional state, beliefs, practices, and conducts related to one's spirit or search for divinity or ultimate truth. Basic characteristics of religion include responsibility and obligation, with spirituality, has only one's perception and beliefs to deal with (Mercado,

1977). Some individuals may consider themselves spiritual and believes in the divine but does not belong to any religious group. I have always been fascinated by the Filipino's religiosity and spirituality, this phenomenon of faith transcending life experiences resulting to their ability to be resilient even in time of death and grief's. Of all age group, the elderly's religiosity is found to be greater since this is considered to be their major source of social support.

Although a lot of studies may indicate positive relation to health and wellness outcomes but the need to look into the spiritual journey through narrative testimonies from the older adults would somehow explain the reason as to how this religious development arises, it's growth, it's challenges and its impact to man as a whole being (Puchalski, 2001). Furthermore, the pursuit of death acceptance through religiosity or spirituality may shed some light on the patterns of this phenomenon. Death acceptance

is defined as when the individual has come to terms with one's mortality and end. This study would show and describe how one's spirituality translated into older adult's proactive stand in their own death acceptance and preparation (Mamaug, 2019). This study wanted to explore the assumption that one's spirituality such as faith in God and belief in the afterlife may have an impact the elderly's Death Acceptance.

## METHODS

### Study design

The study design was qualitative in nature using case study method. Qualitative methods are appropriate due to the complexity of death beliefs and the spirituality phenomenon.

### Participants

The participants comprised at three (3) Filipino older adults, selected from the town of Iligan City. Purposive sampling technique was used to selected participants who were asked about their insights about their spirituality and its impact to their death perception. Older adult that believes in God; older adult having shifted from one religious organization to another; and older adults' instilled spirituality comes from religious imprint from family members during childhood. Participants were eligible to participate if they are 60 years old and above, who is not cognitively challenged, oriented to the research query, assured of strict ethical consideration, and was willing to be interviewed.

### Data gathering

Using a modified Taylor's questionnaire on spirituality attitudes, the spirituality attitudes was assessed using a written questionnaire containing six open-ended questions as guide for the participant interviews (Taylor, 2010). A scheduled series of one-on-one interview with the three older adults with the duration of thirty (30) to an hour.

Older adults were made aware that they can stop anytime and should they feel uncomfortable, they can decline or stop the interview. Furthermore, they were also assured that a guidance counsellor was available should they feel any psychological and emotional stress before and after the interview. At the end each in-depth interview with elderly participants, debriefing was done through a registered guidance counselor from Mindanao State University-Iligan Institute of Technology.

### Data analysis

For this study, qualitative approach was utilized to explore via thematic analysis older people's spirituality using the case study method. Thematic analysis is a process to identify, analyze, and describing patterns (themes) in a given data. It minimally organizes and describes your data set in (rich) detail. Qualitative approaches are extremely varied, multifaceted and subtle in meanings on a given phenomenon (Holloway & Todres, 2003), and thematic analysis is an introductory method for qualitative analysis.

For this study investigation, the relationship between the importance spirituality leading to death acceptance was

investigated through the opportunity of the participants answer openly the interview questions. Rubin and Rubin (1995) stated that the scrutiny in thematic analysis is exciting due to the discovery of themes and concepts found within the data arising from the interviews conducted. A description of emerging themes is a reflexive explanation of the analysis process reported to the readers (Taylor & Ussher, 2001).

Interview transcripts were analyzed to validate the collected data. Resulting emerging categories, properties, meanings, and theoretical insights were then discovered. As the study progressed, the description was expanded with more specific information and participants with that particular issue that were intentionally sought.

### Rigor and trustworthiness

This qualitative study utilized four important considerations for rigor and trustworthiness namely: credibility, transferability, dependability, and confirmability. Triangulation was observed by asking the same research questions to different older adults and collected different techniques to answer the same query. The older adults were then asked to review their answers that were transcribed if it was what they really implied to the questions asked. This is the credibility aspect of the research. By doing this, the transferability of study findings can be generalized and assumed that the same responses would be likely be given. Data validity or dependability is measured through the use of a data assessment and outcomes. A data audit can be conducted if the data was sufficient in form. And when the data categories were comprehensively described and was consistent in its findings, then this can confirm and provide foundation for future replicability of this study.

### Ethical consideration

Permission was secured from the Federation of Senior Citizen Association in the Philippines (FSCAP)- Iligan City Chapter to conduct an interview for the data gathering procedure. After the orientation among 35 older adults', permission was only secured from three (3) able, oriented and volunteer older adults and were purposely selected as the case study participants in 2017. Informed consent was given prior to the study before they agreed to participate; then I contacted the participants and arrange a time and place for an interview.

## RESULTS AND DISCUSSION

### Case profile of the participants

The following cases had shown the profile of the participants.

#### Case 1. Older adult that believes in God

Mrs. A is a 73-year-old, female, married woman who is a practicing Protestant (United Church of Christ in the Philippines) since birth. She is a retired school teacher for 13 years now. She is still very active, doing household chores and busy taking care of her grandchildren. Mrs. A has four (4) children, two of whom are staying with them in their family compound. She enjoys going to senior citizen meetings and going regularly to church.

She was born and baptized in the family of Protestants. She explained that it is a bible-based denomination wherein there is strong belief in God. Just like any Christian religion, they go to Church every Sunday and performed church obligation like ceremonies of baptismal, marriage, death, and tithing. She said that going to church every Sunday and other religious occasion is a must in their family. Due to her faith she appreciated her life experiences, good or bad, to be a precursor in her devout faith in God. Having shared fellowship with family and others gives life more meaningful for her. Her favorite verse in the Bible says it all about her life, it is found in 2 Timothy 4:7 *"have fought the good fight, I have finished the race, I have kept the faith"*. She derives strength and inspiration from her family especially her brother and sister. During the interview, when asked about her physical condition, she said she is healthy aside from cough and fever now and then. She tries to keep a healthy lifestyle with what she eats and doing home exercises. Mrs. A attributed her spiritual influences to her family and believes that belief in God will heal her diseases and help her in her struggles. In addition, she does not fear death since she entrusts her life to God already.

#### **Case 2. Older adult having shifted from one religious organization to another**

Mrs. B is a 61-year-old, widow with five married children. She currently lives with her youngest daughter with her family. She has twelve grandchildren and enjoys doting on them whenever she sees them. She is hypertensive but is on medication courtesy from the support of her children. She informed me that she is enjoying a little pension but some of her children helped her financially when they can.

With regards to her religious/spiritual upbringing, she said that she grew-up in the Catholic religious' tradition. During those times, she has no choice because her family are all Catholics and it serves her well. She does not consider herself overly religious like some Catholics but her spirituality is more on the belief that God (Jesus Christ) is her all. Mrs. A added that what life means to her is God and God is her life. She explained that if not for God she is nothing. Furthermore, she reiterated that her life, her faith in Christ resulted from learning through life experiences and the more she learns about God's words, the more she understood and appreciated what HE did to her and family.

Right now, she is with another religious denomination called Christ life Fellowship and their Pastor is a source of strength for her. She shared that in times she needed advice and support, her Pastor is the one who gives spiritual advises. Although she is hypertensive but she does not worry because she believes that God is there to heal and take care of her. Mrs. A confidently said that with God, she can rely on HIS love and salvation and that is not worried when the time comes that HE will take her to heaven.

#### **Case 3. Older adults instilled spirituality comes from religious imprint from family members during childhood**

Mrs. C is a 76-years-old, female, widow who was a former school teacher. She was brought up religiously as a Protestant by her family but she attributed her strong religious faith from her grandparents. She reminisced that when she was just five years old, she remembers her grandparents always encouraging them to go to Church every Sunday. As children, they were always required to attend Sunday school and go to church even on mid-week services. This was already a routine since she grew-up with her grandparents. Although she was baptized as a Roman Catholic since her parents were Catholics, she preferred to worship with Protestant church till now, just like her grandparents instill in her when she was a child.

Mrs. A considered herself spiritual or religious since she never works or do anything on Sundays but always go to church before doing anything. She is an active member in the church as choir member up till her sickness. She confesses to me that she felt very guilty at times if she cannot go to church and sing in the choir. As a Christian, she believed that we should be devoted and serve God in all times, so that we will be blessed. Blessing according to her is important to have a peaceful mind and peaceful living. Currently, she enjoys being in senior citizen organization as well as church because she feels happy and content when doing so. Learning is a must for her, even when one is old, one should learn many things in life. There are moral lessons to be learned, the advantages and disadvantages which is good for one's self and family.

In 2006, she was diagnosed to have multiple cysts in her liver. Since there was no liver operation done for her, she was advised to maintain vitamins for her liver. Just this 2016, her left knee weakens and just last August 2016, she started using the wheelchair. In all those trials, she said that she always prays to God and asking HIM to extend her life without too much pain and suffering. And if her time comes, she said that she is ready to be with GOD.

Three older adults' narrative interviews were completed based on their spiritual/religious upbringing. Narratives were derived from older adult that believes in God, older adult having shifted from one religious organization to another, and older adults' instilled spirituality comes from religious imprint from family members during childhood (**Figure 1**). All participants were able to tell how their spiritual/religious upbringing, their perception about their life meaning and influences, and their perception about faith and death.

After the interviews were done, I transcribed the interview and used the thematic analysis as proposed by [Braun and Clarke \(2006\)](#). Wherein the thematic analysis involves the process of identification, analysis, and describing patterns found in the data.



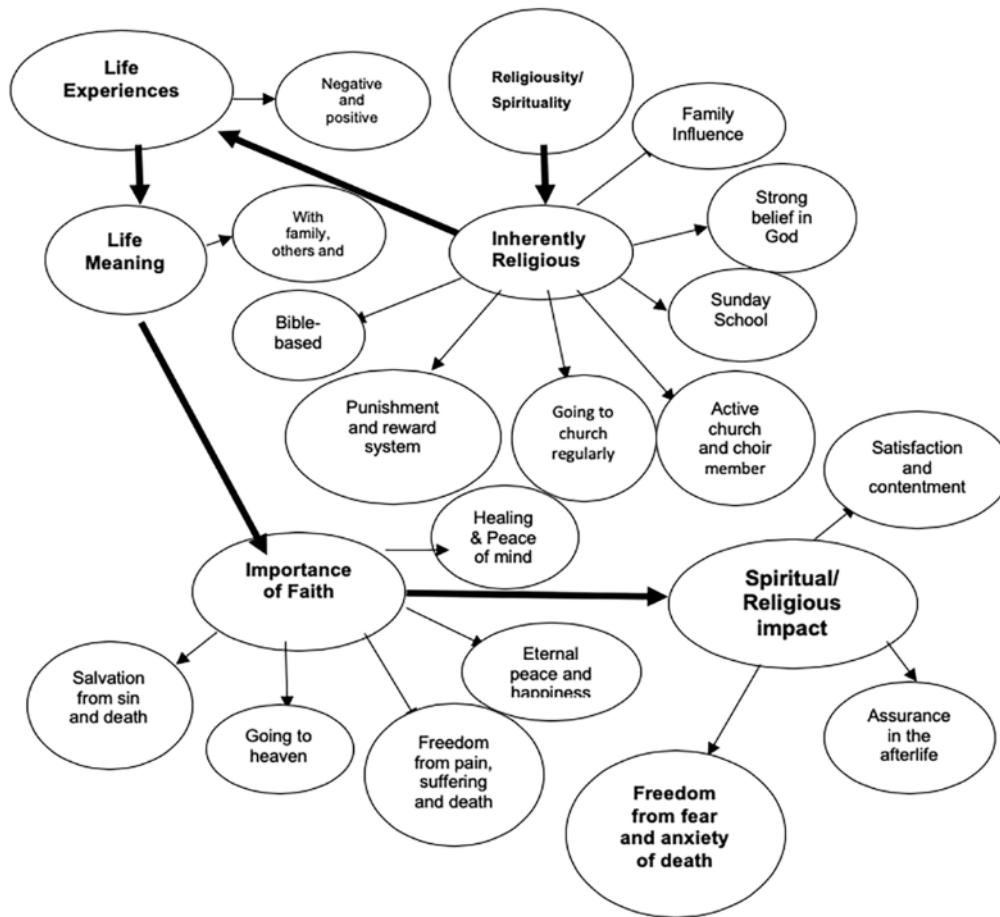


Figure 1 Developed thematic map showing five initial main themes

Throughout the coding and categorizing of initial themes, this was further extracted and resulted to the emergence of the final

thematic map, I finally developed the following main themes as shown in Figure 2.

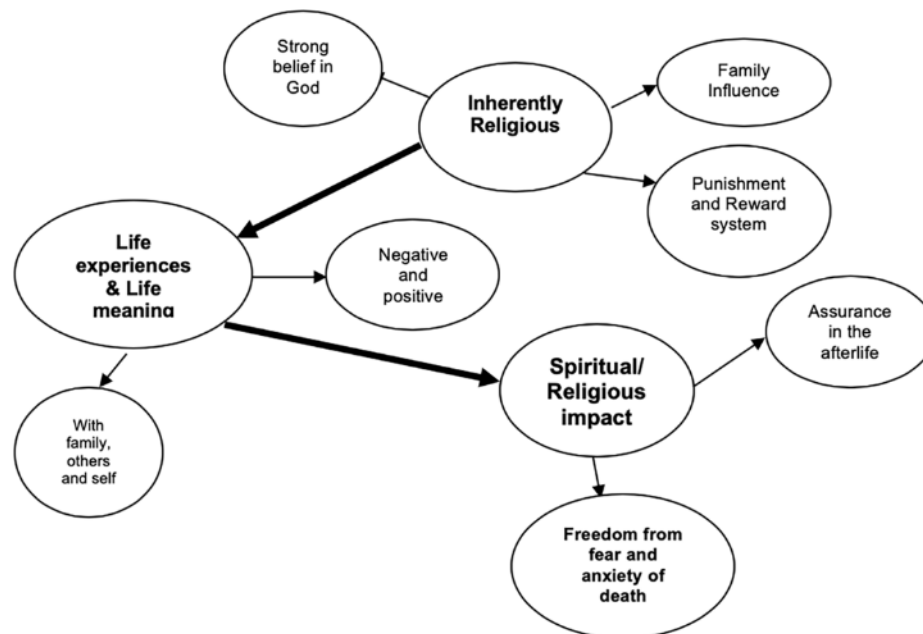


Figure 2 Final thematic map, showing final three main themes

The following were the final titles and descriptions of the three (3) themes, as well as the perceptions, literal quotes, which were validated by participants during data analysis.

### Theme 1. Older adults are inherently religious

As one ages, the more individuals contemplate of how life has evolved and what it meant for us. The finding of meaning is oftentimes synonymous of spiritual quest. The tradition of various religions in different countries has shown a positive relationship to the psychological well-being and created a diverse effect on physical and psychological ailments (Rippentrop et al., 2005). The older adults in this study indicated that being religious and spiritual was handed down from generation to generation making it natural and intrinsic in the Philippine society.

The following statements from participants showed their testimony on being taught about religious practices from a very young age.

*"I remember when I was young my grandparents always tell us to go to church every Sunday. We were not allowed to go out if we cannot go to church first. Sunday is the Lord's Day according to the bible's teaching. That is why until now that I am old, I always go to church especially every Sunday because that's HIS day."*

### Theme 2. Older adults derived their faith in god through their life experiences and its meaning

Life experiences usually define individual's spiritual standing or status. Although Filipino's are inherently religious in nature but it is their life experiences that makes them feel closer established through many challenges encountered that they attributed strength and resiliency from God (Batara, 2015). Due to this, life experiences and its triumphs and failure are understood as lessons and direction from God. Thus, the establishment of life meaning as one age creates wisdom about the individual's journey through life and eventual end in death.

This is evident in the narrative statements of the participant regarding faith in God through life experiences and its meaning.

*"I know that in all I have been through in my life, God has always been with me, in sorrow and happiness. HE is the one who guided me in times of troubles. I pray to HIM and go to church because HE is my refuge. If God left me in times of need, then I will not be here now."*

### Theme 3. Older adults believe that their faith in god offers them a sense of security and hope in the afterlife

Being spiritual or religious oftentimes created a peace of mind in times of confusion, fear and anxiety especially in contemplating about life and death amongst older adults (Tarakeshwar et al., 2006). This intangible psychological positive emotion is advertently a form of assurance that death is not the end and that one should not fear it especially if he is religious or has lived a good life.

The following excerpts from participant described how this belief in God created a sense of security and hope in the afterlife.

*"If you are living in God's word and doing the good deeds, you should never sad and fear death. God has promise us HIS paradise in heaven for those serving HIM."*

## CONCLUSION

The narrative testimony of the old adult participants in this study which includes cases of older adult that believes in God, older adult having shifted from one religious organization to another, and older adults' instilled spirituality comes from religious imprint from family members during childhood describes the three important patterns in the religious or spiritual standing of the participants. The themes signified that (1) older adults are inherently religious and this nature is a subsequent factor in (2) their faith in God basing on their life experiences and life's meaning. Furthermore, this (3) belief or faith in God offers them a sense of security and hope in the afterlife. These themes explain the pattern in the creation of a religious/ spiritual standing that leads to death acceptance among participants as evident in their interview results.

The study result showed rich data regarding religiosity among Filipino older adult, however, the need for extensive qualitative research in a large number of participants through life review may further validate the results in this study. It is also recommended that similar studies may be done with other countries and their outlook regarding religion and spirituality beliefs and behaviors towards death to form a comparison and similarity among factors revealed. In addition, a study on the differences between spirituality beliefs and religious practices in order to describe thoroughly the stance of an individual towards his life meaning and assumed views on death

### Declaration of Conflicting Interest

This author declares that the study has no conflict of interest. All procedures followed were in accordance with the ethical standards (institutional and national). Informed consent was obtained from the elderly participants for being included in the study.

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ORIGINAL RESEARCH

## EFFECT OF A WORKBOOK IN HEALTH EDUCATION ON SELF-EFFICACY AND QUALITY OF LIFE OF PATIENTS WITH CORONARY HEART DISEASE

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**Abstract**

**Background:** Coronary Heart Disease (CHD) has a high recurrence in Indonesia. This condition may occur as a result of the failure of compliance with post-acute management following a heart attack by CHD patients. One of the causes is the lack of effective health education.

**Objective:** The aim of this study was to identify the feasibility of the workbook in improving patients' self-efficacy (SE) and quality of life (QoL).

**Methods:** This research used a quasi-experimental with pretest-posttest control design. A pretest was done to the patients who were treated in the cardiac intensive unit, and a posttest was carried out at the end of the first and second month after the pretest. The population was all post-acute CHD patients who were admitted to the cardiac intensive unit in one of the referral hospitals in West Java, Indonesia. A purposive sampling was used and obtained 39 respondents who were divided into control and intervention groups. The intervention group was given a health education using a workbook, and the control group was given a direct health education. Self-efficacy was measured using a questionnaire developed by the authors, with high validity and reliability. A SF-12 instrument was used for measuring the quality of life. Data were analyzed using a descriptive quantitative analysis such as mean, Mann Whitney test, and Independent t-test. To estimate the effects of the intervention to QoL and SE, Kruskal Wallis test and One-way ANOVA were used.

**Results:** The results showed that there was an increase in SE and QoL in both groups, either in the posttest 1 or posttest 2. The comparison of QoL in the pretest, posttest I and II obtained  $p=.452$ ,  $.741$ , and  $.826$ , while SE between and within groups obtained  $p=.732$ ,  $.220$ , and  $.009$ , respectively.

**Conclusions:** Health education using the workbook was significantly more effective to increase SE than QoL of the CHD patients.

**KEYWORDS**

coronary heart disease; health education; self-efficacy; quality of life; workbook

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## INTRODUCTION

Coronary Heart Disease (CHD) is a disease in which the prevalence increases every year and creates a high economic burden for Indonesia ([The Center of Data and Information, 2014](#)). This condition causes the importance of post-acute management of patients with CHD to prevent recurrence or unexpected complications. Efforts that must be made by patients after an acute attack include lifestyle changes, such as changes in dietary

patterns, smoking habits, limiting activities, controlling stress, and anxiety.

The rate of adherence to post-acute management in CHD patients in Indonesia is currently considered low. [Harun \(2013\)](#) stated in his research that controlling lifestyle in CHD patients is still a problem, especially in activity control and diet. In addition, the



poor management of the post-attack is still present, as indicated by the following indicators: 56% of patients often experienced angina, physical limitations were quite high at 42% in the study of 100 CHD patients after acute attacks (Aan Nuraeni et al., 2016), and CHD recurrence rated at 40% (Indrawati, 2014). Moreover, it is also known that the quality of life in more than half of patients with CHD in one of a referral hospital in West Java Indonesia was still low (Aan Nuraeni et al., 2016).

Several factors can be the causes of non-compliance for post-attack management in CHD patients. According to Miller and DiMatteo (2016), non-compliance with post-acute management can be influenced by lack of health literacy, poor health beliefs, and behaviors, side effects of treatment, financial limitations, and depression. Besides, according to Shin et al. (2013), another factor that had a significant direct effect on adherence to self-care in CHD patients is self-efficacy.

Self-efficacy affects the compliance of CHD patients in self-care, and one of the factors that influences self-efficacy is health information or knowledge (Shin et al., 2013). According to Latimer et al. (2005), health information is important for shaping health behavior and helps in determining actions in health management. Indrawati (2014) showed that there is a significant relationship between knowledge and the ability to do secondary prevention of CHD patients.

Current problems related to health education, especially in cardiac intensive units in one of the referral hospitals in West Java in Indonesia, are the provision of health education without the results of a comprehensive study of the learning needs of patients with general material. Moreover, nurses also stated that there was lack of time to provide health education to patients because of the high workload of nurses in the ICU and this was one of the obstacles to provide health education to the patients (A. Nuraeni et al., 2017). These results may lead to ineffective provision of information related to self-care after acute attacks on patients and families.

A workbook is a media prepared to be used as the source of information and is expected to be the answer to the problems related to the implementation of health education. One of the studies showed that CHD patients which had been given workbook had a greater increase in self-efficacy of physical activity (Peterson et al., 2014). However, this study analyzed the influence of workbook in the Black, Hispanic, and Caucasian participants in the United States which has different culture, demographic, and health management system with the Indonesian respondents, moreover, it only showed the relation in the use of workbook to the self-efficacy of physical activity.

The workbook in this study is prepared as a media of learning consisting of guidelines for managing CHD at home based on the learning need assessment, including the anatomy and physiology of cardiovascular and management of CHD symptoms, such as CHD patient activities in hospitals and at home, controlling risky lifestyles, fulfilling sexual needs, stress management, medications, and CPR. This workbook can be used by patients and families as a guideline to manage CHD patients at home, and also can be used by health workers such as nurses as learning

materials or media, a solution to the lack of time to provide overall education to patients and families. Furthermore, through this workbook, patients are also expected to play an active role in efforts to manage their self-care after an acute attack.

This study aimed to measure the feasibility of the workbook in improving the self-efficacy and the quality of life CHD patients after their acute attacks. Besides, this workbook is important for Indonesian people who have so many different backgrounds, such as cultural literacy, psychosocial conditions, and different health services for CHD patients in certain places. These differences can determine which methods can be given appropriately to certain situations and conditions of CHD patients.

## METHODS

### Study Design

This study used a quasi-experimental with a prospective approach using a pretest-posttest control design to investigate the feasibility of the workbook to enhance the self-efficacy and the quality of life.

### Sample

The population was all post-acute CHD patients who were admitted to the cardiac intensive care unit in one of the referral hospitals in West Java. The sampling method used non-probability purposive sampling, with the inclusion criteria: Patients with CHD who were admitted in ICCU or HCCU, have not had any chest pain experiences at all in 24 hours, and stated by responsible nurses. The selected respondents were divided into the control group and intervention randomly.

The number of respondents was calculated using the formula of unpaired numerical analytic with type I errors set at 5%, and type II errors were set at 20%, and the average standard deviation of the previous study was 3.54 (Delima et al., 2018). Based on the calculation, the number of respondents was 23.74 rounded up to 24 respondents for each group, which indicated that a total of 48 respondents were recruited.

### Instruments

The Self-Efficacy (SE) was measured using a questionnaire developed by researchers based on the theory of SE by Bandura (1997, 2004), which combined with the recovery management for post-acute CHD patients (National Health Service, 2016; National Heart Foundation of Australia, 2013) and Cardio-pulmonary Resuscitation (CPR) guidelines from American Heart Association (2015). The SE questionnaire consists of 27 closed questions with rating scale - very confident, confident, not confident, and very not confident. The maximum score is 108, and the minimum is 27. A content validity of the instrument was tested by three experts in the cardiovascular and critical care nursing, followed by face validity in CHD patients. The construct validity test used a Pearson's product-moment in 60 respondents. The validity test showed items of SE instrument were valid with  $r$  ranged between .081 and .817 ( $r$  table = .081), except in the item no 27, but it was still included in the analysis. The reliability test results using Cronbach's alpha was .893. The quality of life (QoL)



was measured using the Indonesian version of the SF-12 instrument that had been used in previous Indonesian researcher, with minimum and maximum score were 12 and 47, respectively. The value of Pearson's  $r$  product moment in each question ranged between .53 and 0.83 ( $> 0.51$ ) ( $r$  table) and Cronbach's  $\alpha$  value .855 (Kiki, 2007).

### Intervention

The workbook was developed by researchers based on national heart information (National Health Service, 2016; National Heart Foundation of Australia, 2013), guidelines for management of hyperlipidemia from the Association of Indonesian Cardiologists (Erwinanto et al., 2013), and CPR guidelines from American Heart Association (2015). Basis of the workbook content related to the Cardiac Patients' Learning Needs study (Aan Nuraeni et al., 2018). The workbook contains guidelines for managing CHD patients at home, such as information about anatomy and physiology of cardiac, pathophysiology of heart attack, symptoms management of CHD, lifestyle modification, medications use in CHD, diet, physical activity, psychological needs, and CPR. The workbook content had been peer-reviewed by two specialist cardiovascular physicians and three nurses who have experience in handling CHD patients of more than 15 years. In addition, the workbook is also provided with a record of the implementation of CHD management that must be filled in every day by the patient.

The study was conducted using the pretest-posttest method in the control and intervention groups for two months period and delivered by nurses. In the cardiac intensive care unit, both groups of selected respondents were given the SE and QoL instruments as a pre-test. Then, the intervention group was given a workbook and notified of its use. While the control group was given direct health education which was usually done by nurses or doctors. After the respondents of both groups discharged from the ward, the measurement of SE and QoL were performed by phone at the first and second month after their pretest were taken.

### Data Collection

The data were collected from May to August 2018 by a research assistant who is also a nurse. The pretest was conducted to control and intervention groups in the cardiac intensive care unit when patients had been declared free from chest pain for 24 hours by doctors. The posttest had been done twice, in one month and two months after pretest, after the respondents of both groups

discharged from the ward. The measurement of SE and QoL in the posttest was performed by phone.

### Data Analysis

The descriptive analysis used quantitative data analysis was applied to describe the SE and QoL from both groups at the three measurement stages with minimum, maximum, mean, standard deviation, frequency and percentage values. To estimate the effect of the intervention to respondents' SE was used the One-way ANOVA, because the study measured the comparison mean of two groups without category to analyze estimation effects of, while the Kruskal Wallis test was used to describe the intervention effects on respondents' QoL.

### Ethical Consideration

Ethical clearance for data collection had been obtained from the Research Ethics Committee of Universitas Padjadjaran No. 575/UN6.KEP/EC/218. All respondents had been informed and signed the consent when they agreed to participate in this study. In order to protect the respondents from unexpected conditions, considering they were patients who were in the post-acute phase, then the provision of health education was only given to those who have been declared free of chest pain at least within 24 hours stated by nurses or doctors. In addition, in the workbook is also provided information about treatment that must be done by patients or families in the event of an emergency condition such as chest pain when they are carrying out certain activities.

## RESULTS

### Characteristics of Respondents

During the respondents' recruitment, the number of respondents in the initial data collection (pre-test) was 52 persons, and then 11 respondents dropped out (posttest one) because they could not be contacted and three respondents died. Phase two monitoring was done in two months after the pre-test. In this phase, two respondents died, so only 39 respondents could continue this study; the response rate was 81.25%.

The following are the results of the quantitative data analysis, including the initial data (pre-test), the first-month data, and second-month data after the intervention.

**Table 1** Respondents' Characteristics

Respondents' characteristics	Control Group		Intervention Group	
	f (n=19)	%	f (n=18)	%
<b>Age (years)</b>				
26 – 55	7	36.8	8	44.4
56 – 65	12	63.2	10	55.5
<b>Sex</b>				
Male	14	74	16	89
Female	5	26	2	11
<b>Level of education</b>				
Primary school	8	42	11	61
Moderate school	7	37	3	17

**Table 1** Respondents' Characteristics (Cont.)

Respondents' characteristics	Control Group		Intervention Group	
	f (n=19)	%	f (n=18)	%
Higher education	4	2	4	22
<b>Medical interventions</b>				
PCI and medications	11	58	9	50
Medications	8	42	9	50
<b>Duration of illness</b>				
≤ 6 months	9	47	13	72
> 6 months	10	53	5	28
<b>Have ever received health education</b>				
No	11	58	14	78
Yes	8	42	4	22
<b>An effort to get information</b>				
No	8	42.2	10	56
Through media information	2	10.5	4	22
Through other people	-	-	1	5.6
Through health workers	8	42	2	11.11
Others	1	5.3	1	5.6

**Table 2** The Pretest and Posttest of Quality of Life and Self-Efficacy of the Control and Intervention Groups

Variables	Mean±SD		Median (min-max)		Variant <i>p</i>
	Control	Intervention	Control	Intervention	
<b>Pretest</b>					
Quality of life (SF 12)	36.9±6.9	38.6±5.5	41(21-44)	40.5(27-46)	.180
Self-efficacy	79.7±4.24	79.2±3.85	78(74-89)	79.5(73-87)	.481
<b>Posttest I after one month</b>					
Quality of life (SF 12)	43±2.9	42.7±3.6	43(34-46)	43(31-46)	
Self-efficacy	82±5.1	84.3±6.2	83(74-90)	82.5(75-97)	
<b>Posttest after two months</b>					
Quality of life (SF 12)	45.1±1.8	45.1±1.36	46(39-46)	46(43-46)	
Self-efficacy	92.1±6.9	97.6±4.9	91(80-105)	97.5(84-105)	

#### Homogeneity of Quality of Life and Self-Efficacy in the Control and Intervention Groups

Based on Table 2, it can be seen that the initial data on QoL and SE of respondents were all homogeneous, this can be seen from the variance  $p > .05$ .

#### Differences in QoL and SE in the Control and Intervention Group

Table 3 shows the different score between two groups. The Mann-Whitney was used to measures the different test for QoL between

two groups because the data were not normally distributed. While the SE used the Independent T-test because the data were normal. The results showed a positive increase in all variables in both groups. However, either the variable of QoL or SE was not significantly improved after one-month measurement ( $p > .05$ ). It is also showed that the quality of life in the control group after two months of measurement had a similar increase in both groups. A significant difference was seen in self-efficacy. The intervention group had a higher increase in self-efficacy than the control group ( $p = .009$ ).

**Table 3** The Difference Posttest Result between the Control Group and the Intervention Group After One Month and Two Months

Variable	Mean±SD	Mean Rank		<i>p</i>
		Control	Intervention	
<b>Quality of life (SF 12)</b>				
After one month	42.8±3.2	19.55	18.42	.741
After two months	45.1±1.57	19.32	18.67	.826

**Table 3** The Difference Posttest Result between the Control Group and the Intervention Group After One Month and Two Months (Cont.)

Self-efficacy (SE)	Mean±SD			
After one month	83.1±5.7	82.00±5.1	84.33±6.2	.223
After two months	94.78±6.6	92.1±6.9	97.6±4.9	.009

#### Comparison of Quality of life and Self-Efficacy in the Control and Intervention Groups in the Pretest, Posttest after One Month and after Two Months

Tables 4 and 5 show that after one and two months of measurement, the variable of QoL was not changed, which was in contrast with SE variable that after two months had a

significant change ( $p = .009$ ) between control and intervention groups. There were no differences of SE between groups after one month. It indicates that neither direct health education nor workbook could improve the QoL of CHD patients. However, the workbook only increases the patient's SE after two months.

**Table 4** The Comparison of Quality of Life in the Control and Intervention Groups in the Pretest, Posttest after One Month and After Two Months

Measurements	Mean Rank		<i>p</i>
	Control	Intervention	
Pre-test	17.71	20.36	.452
Post-test I (after one month)	19.55	18.42	.741
Post-test II (after two months)	19.32	18.67	.826

**Table 5** The Comparison of Self-Efficacy in the control and intervention groups in the pre-test, post-test after one month and after two months (n = 36)

Measurements	Sum of Squares	df	Mean Square	F	p
<b>Pretest</b>					
Between groups	1.973	1	1.973	.120	.732
Within groups	577.216	35	16.492		
<b>Posttest I (after one month)</b>					
Between groups	50.324	1	50.324	1.561	.220
Within groups	1128.000	35	32.229		
<b>Posttest II (after two months)</b>					
Between groups	280.203	1	280.203	7.697	*.009
Within groups	1274.067	35	36.402		

## DISCUSSION

Based on the results of the study, it can be seen that the quality of life and self-efficacy had good baseline scores. This condition indicated that even though the respondents were still in the acute phase, the respondents' quality of life scores are high (37.78), which means they had a good quality of life. Similarly, with self-efficacy, respondents believed they were able to manage CHD after a heart attack. These two variables showed mutually reinforcing results.

One month after the initial measurement, the score changed in both variables. Increased score occurred in quality of life and self-efficacy. Improvement in quality of life-based on this study occurred along with the improvement in the physical condition of the respondents. At the time of initial measurement, respondents were still in an acute condition, at that time a heart attack had just happened, the hemodynamic conditions of the respondents were relatively stable but under the influence of drugs, continuous monitoring, and bed rest. In this acute condition, CHD patients

usually experience a decrease in the physical condition and a high level of anxiety and also depressive symptoms. This condition increases especially before the intervention of revascularization and slightly decrease after going through PCI revascularization intervention, which was revealed by a previous study (Gu et al., 2016). Decreased physical conditions accompanied by psychological problems experienced by the patients can affect the low quality of life of patients (Aan Nuraeni et al., 2016). The same results were shown in this study, although the pretest quality of life was quite good at one month after the patients went through the acute phase, the quality of life score increased higher than the pretest. Likewise, with self-efficacy, an increase in scores occurred one month after the pre-test. According to Alavi et al. (2015), self-efficacy were influenced by experience, motivation, knowledge, and efficient educational system. Respondents had received health education either through direct education programs or through the workbook in accordance with their illness while undergoing treatment. In addition, when respondents underwent the recovery process, respondents also had experience

related to illness and management of the disease. These things are thought to be the cause of increasing self-efficacy.

Based on the results of different tests, a significant difference at two months after measurement occurred in self-efficacy. Self-efficacy in the intervention group increased higher than the control group. This occurs because of the influence of the education provided using the workbook. Self-efficacy is shaped by one's own experience, other people's experiences, verbal persuasion and one's psychological or affective state (Bandura, 1997). In addition, education, as well as an efficient education system can influence the improvement of self-efficacy (Alavi et al., 2015). Positive psychological conditions and educational efforts that have been made to respondents in this intervention group can strengthen the assumption that the differences in self-efficacy that occur between the control group and the intervention are due to additional interventions in the form of educational models using the workbook. The workbook contains information needed by respondents to manage the disease at home. In addition, respondents can re-read the material or the instructions they need. This is different from the usual health education provided so far, respondents were only given health education materials when they were treated without written information that could be taken home.

Improvement in quality of life in the control group and intervention did not show a significant difference when compared between the control group and the intervention group. But even so, the results of the pre-posttest comparison in each group showed that the intervention group experienced a higher increase compared to the pre-posttest of the control group. This shows that the addition of this education using a workbook can have a better effect in increasing the quality of life scores after two months after the acute attack experienced by respondents.

However, the increase in quality of life scores did not experience a significant difference when compared between the control group and the intervention group. The findings obtained based on the results of this analysis reinforce the reasons for the results that show no significant difference in quality of life between the control and intervention groups. According to Ahn et al. (2016), an improvement in quality of life will occur if an increase in self-efficacy is accompanied by improvement in self-care health behavior on modifiable cardiovascular risk factors. In this study, the respondents' self-care health behavior was only carried out in several aspects, allowing an increased score in quality of life did not differ significantly between the intervention and control groups.

Based on this research, it can be seen that the education provided through this workbook does not directly affect changes in quality of life but affects self-efficacy. According to Ahn et al. (2016), self-efficacy can affect the quality of life, there must be a change in self-care health behavior. The workbook provided is not fully able to change respondent's healthy behavior, so that barriers to self-care health behavior are still identified in CHD patients who have been educated through the workbook. Moreover, nurses can use the workbook to deliver health education to CHD patients

because this method significantly has proven to increase patients' self-efficacy in post-acute CHD management.

The limitation of this research was the small sample size. Therefore, it is necessary to do another study with more significant samples. Besides, it is also essential to analyze barriers in CHD patients' healthcare behavior.

## CONCLUSIONS

In general, before health education was given, all respondents had a similar quality of life and self-efficacy. After one month, neither direct health education nor workbook could improve QoL and SE. However, after two months, only SE was improved by the workbook. Therefore, it could be concluded that workbook is more feasible to improve the SE than QoL in CHD patients after suffering an acute attack.

## Declaration of Conflict of Interest

The authors declare that there is no conflict of interest.

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## Author Contribution

All authors have contributed to the preparation of the manuscript. A.N. developed article ideas, theories, analyzed literature, interpreted data, and wrote manuscript. R.M. and A.A. interpreted data, wrote and criticized the manuscript. All authors agreed with the final approval of the manuscript.

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## ORIGINAL RESEARCH

# THE EXPERIENCES OF STAKEHOLDERS IN SUPPORTING THE IMPLEMENTATION OF THE MENTAL HEALTH COMMUNITY RECOVERY PROGRAM IN WEST JAVA PROVINCE INDONESIA

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## Abstract

**Background:** In general, mental illness poses the burden to the government, family, and community because of the patient's low productivity and high-cost treatment. Recovery Based Program is a method to treat people with a mental health issue, which focus on the patient's personal journey to have meaningful life despite the limitation of the illness. Several stakeholders of mental health have been trying to adopt it. Nevertheless, various problems arise at the time of the program execution.

**Objective:** Purpose of this study is to obtain information regarding the experiences of stakeholder in recovery-based program implementation.

**Methods:** Qualitative research with a phenomenological approach has been conducting. Five program holders from various institutions/organizations which running mental health program in West Java interviewed. Data were analyzed using Colaizzi's method.

**Results:** The result of this study revealed three themes: mental health services from stakeholder's perspective, awareness of recovery, and efforts to overcome mental health challenges.

**Discussion:** There is an urgency for enacting mental health regulation in a local scope, incorporating evidence-based practices into mental health programs and creating nursing homes for people with mental illness after being hospitalized at a psychiatric hospital.

**Conclusion:** Mental health stakeholders encountered varied experience. However, they maintained an optimistic perception about Recovery Based Program for Mental Health in future.

## KEYWORDS

awareness; evidence-based practice; Indonesia; mental health; recovery; qualitative

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## INTRODUCTION

Generally, mental disorders cause a burden for governments, families, and communities because of the declining and less productivity of patients. The WHO (World Health Organization) report in 2001 mentions that the economic burden of mental disorders was 13% greater than the incidence rate due to accidents and cardiovascular disease ([Department of Health, 2013](#)). According to the 2013 Riskesdas (Indonesian National Health Survey), the number of people with severe mental illness was 1.7 per mile or an estimated 425 thousand people ([Department of Health, 2013](#)). In West Java Province, Indonesia, the number of people with schizophrenia was 1.6 per one

thousand or 70.000 people ([Patmisari, 2014](#)), while the recurrence rate of schizophrenic patients is also high.

Majority of the patients with a mental disorder who come to the hospital were in a chronic state. Moreover, most of them neglected and encountered a high stigma in the community ([Townsend, 2014](#)). Therefore, mental health programs had shifted from a hospital-based approach to community-based approach. A recovery-based program is one of the efforts to heal the patient in the community based on their journey to have meaningful life despite the limitation of the illness ([Compton et al., 2014](#)).

The Community Recovery Based Program has been implemented in numerous ways with various successful result ([Forrest, 2014](#); [Simpson & Penney, 2011](#); [Slade et al., 2011](#)). However, the lack of studies conducted in regard to the recovery-based program, especially in West Java province Indonesia, provide little understanding of how the program implemented and how successful the program can be.

In West Java, the community recovery-based program manages and operates by stakeholders. They are West Java Health Agency/West Java Psychiatric Hospital (WJA/WJPH), West Java Social Agency (WJSA), Indonesian Schizophrenia Care Committee/Komite Peduli Skizofrenia Indonesia (KPSI) and Padjadjaran University. Each of these organizations has specific roles and functions. WJA/WJPH is the leading sector for program implementation. This unit has various facilities for people with a mental health problem, placed at inpatient clinics, outpatient clinics or community/primary health center (PHC). WJHA has a special section in it which regulates various mental health programs in West Java ([Patmisari, 2014](#)). They obtained health budget from the central government distributed in the form of a program. WJHA also has authority to manage health care providers on sub district/village level (PHC).

Furthermore, various organizations also play an essential role in implementing mental health programs at West Java Province. WJSA is responsible for homeless people who have mental disorders, as well as recovery programs for patients after hospitalization in psychiatric hospitals. It provides shelter for patients during the recovery period. KPSI provides support for people with schizophrenia. Their activities have included treatment, rehabilitation, community care, research, training and capacity building, awareness and lobbying ([Brooks et al., 2018](#); [Prasetyo & Gunawijaya, 2018](#)). Padjadjaran university represents the education sector, a place where health workers (e.g., doctor/psychiatrist, nurse, social worker, and psychologist) learns how to deal with mental health problems, including recovery-based program. The university also helped in formulating mental health regulations in West Java. The purpose of this study was to explore the experiences of stakeholders in the implementation of the community recovery-based program for people with severe mental illness in West Java, Indonesia.

## METHODS

### Study Design

This study was a qualitative phenomenological study. The primary objective of the phenomenology study is to explicate the meaning, structure, and essence of the lived experiences of a person, or a group of people, around a specific phenomenon ([Christensen et al., 2010](#)).

### Setting

The venue of the contact was stakeholders' institutions. Those are WJHA, WJSA, IPKJI (Indonesian Mental Health Nursing Association), KPSI Bandung Branch office in Grha Atma (Community Mental Health Centre) and Faculty of Nursing, Padjadjaran University. Researchers came to the office of each

participant to interview them. The data were collected from August-October 2017.

### Participants

Five participants were involved in this study. The age of the participants ranged from 34 to 56 years. All participants were Muslim. Three participants were men, and two were women. Most of participants had experienced as program holders in mental health at their institutions. The inclusion criteria for the participant were the participant must be a key person who handle a mental health program, have profound knowledge about mental health program, able to provide informed consent, and willing to be a participant in this study. Five program holders interviewed that is Subdivision Head of Infection Disease Control and Prevention, WJHA; Division Head of Social Rehabilitation, WJSA; Psychiatric Nursing Professor/Head of Post Graduate Program, Faculty of Nursing, Padjadjaran University; Head of IPKJI, West Java Branch; and Head of KPSI, Bandung Branch.

### Data Collection

Data collection was conducted by the lead researcher and the third researcher. The lead researcher interviewed participants from WJHA, Padjadjaran University and IPKJI, the third researcher interviewed participants from WJSA and KPSI. Information gathered through in-depth, focused interviews. Each participant interviewed twice. Purpose of the first interview was to explore participants' experiences as the stakeholder in the implementation of the recovery-based program in West Java Province, Indonesia. The second aim was to provide an opportunity for the participant to review their transcript of the interview. The length of the first interview ranged from 45 to 60 minutes, while the second ranged from 30 - 40 minutes. Moreover, researchers also made field notes and requested supporting documents from participants.

### Data Analysis

Data were analyzed using seven steps of Colaizzi's (1973) ([Morrow et al., 2015](#); [Polit & Beck, 2008](#)). The first step is to transcribe the recording interview. After the transcription process, the transcript returned to the participant for validation. At this point, the participant was invited to add further information or delete any statement that they believed did not reflect their experience. The majority of participants agreed with the content. However, some participants wished to provide additional information. The researcher then read and reread all the participant's narrative description. This process gave the researcher a general sense of the participant's experience. Then the researcher commenced the process of identifying significant statements which the researcher believed captured the core element of the participant's experience. This process involved the researcher extracting phrases and statements from each participant's narrative description that directly related to the phenomenon. After this activity, the researcher formulated more general statement or meaning for each significant statement. The next step involved organizing the aggregate of formulated meanings into theme clusters. In undertaking this process, the researcher repeatedly returns to the participant's statement to ensure that the explicated themes were congruent with the formulated meanings and reflected the participant's experience.



## Trustworthiness

Trustworthiness was conducted to ensure validity and reliability in qualitative research (Polit & Beck, 2008). Trustworthiness maintained by performing members check. In achieving this, the narrative description returned to the participant for validation. Moreover, trustworthiness determined by the length of time the researcher remains at the site of the inquiry and the ability to conduct research appropriately (Patton, 2002). Meanwhile, as the researcher did not work at the facility in which this project conducted and therefore, had no relationship with participants, a period was set aside between obtaining participant consent and undertaking the formal interview process. Besides, the researcher met informally with participants for developing trust and rapport before the interview. Furthermore, all researchers evaluate and analyze each stage of the research process to ensure transparency of the research process. In keeping with this requirement, findings of this study were made available to the participant for their reflection. Moreover, the research process was recorded for the audit trail. Another method to enhance the research trustworthiness is using triangulation. Two techniques used are investigator and method. In investigator technique, interview data were analyzed simultaneously and separately by all researchers. Overall analyses were compared and contrasted. Method triangulation involves the use of multiple methods of data collection for the same phenomenon. Researchers use a vibrant blend of unstructured data collection methods (e.g., interviews, field notes, documents) to develop a comprehensive understanding of the phenomenon.

## Ethical Consideration

In undertaking this project, several ethical issues addressed including ethics approval, informed consent, anonymity, confidentiality, storage of data, level of risk, and right to withdraw from the research as the participant without prejudice. According to local regulation, no formal ethical scrutiny required. For this study, researchers obtained permission from the Government of West Java through West Java National and Political Unity Agency. Later, the researcher obtained permission for undergoing research from every stakeholder office. Before conducting the interview, participants were asked to give written informed consent. Earlier, participants provided with information about the research such as the objective of the study, methods of information gathering, level of involvement, assurances of confidentiality and anonymity, level of risk, and the right to withdraw from the study without prejudice.

## RESULTS

Three themes emerged from data, (1) Mental health services from stakeholder's perspective, (2) Awareness of recovery, and (3) Efforts to overcome mental health challenges.

### Mental health services from stakeholder's perspective

#### Hospital-based services and community

Hospital-based services are still a primary approach to handle patients with a mental health issue, as stated by the following opinions.

*"Treatment of patients with mental disorder still focus on hospital services, not yet popular in the community."*

*"Just give medicine to our patients."*

In Indonesia, community-based mental health services are not popular. Several respondents said that the approach is still medical based. The stakeholders are aware, to overcome the existing problems, they encounter various obstacles, which expressed by the following participants.

*"This problem is about ODGJ/people with a severe mental illness. We are still throwing each other as if all the responsibilities for taking care of them to the social agency. The focus on our treatment is in social rehabilitation sector, not medication. However, in reality, the focus for treatment still depends on the medication."*

Actually, with the concept of the public health center as the spearhead of health services, mental health services can be applied at the community level. In this case, some stakeholders stated that they already have collaboration with the public health center. This was stated in the following statement.

*"The role of social agency, we work with TPKJM (mental health professional team), and other professionals."*

*"Public health center workers should be trained on mental health subject because not all public health center has psychiatric nurses or workers. What I found, not all workers trained about mental health, both doctors and other health workers."*

#### Lack of EBP (Evidence-Based Practice) in service

Some respondents said there is no comprehensive study of the mental health concept in Indonesia. Sometimes, the same program is conducted with a similar pattern from time to time.

*"We must be aware. The trend is changing. The future trend will discuss chronic illness and mental disorders, not an infectious disease anymore. Therefore, if we do not implement the program based on our research, we will be left behind. In fact, the article in journals is published every 5 minutes in the world."*

#### Funding for mental health programs is not a priority

The mental health program is considered to be less attractive and has a limited place in the hearts of the stakeholders. That makes policymakers did not give priority to the funding. A respondent stated in the following opinion.

*"Perhaps because the budget did not exist in 2014-2015, 2016 also did not exist. But there is a plan in 2018. Our governor will give us more funding for mental health programs. We will make a special unit for people with mental disability. We call it with the name 'rehabilitation center' for people with mental illness."*

#### Policy in mental health

Unclear regulations make it difficult. This is stated in the following statement.

*"Actually, the Government less commit with their vision, West Java proclaimed free pasung (confinement) in 2018, but that is very difficult. I think the Government will continue this vision in 2019 and subsequent years. Yes, we just follow it. But there is still no regulation in West Java."*

*"We still have to follow the RPJMD (government plan) that proclaimed the area, so our program is aligned."*



### Stigma and the client's participation

The concept of stigma touched upon by various respondent statements. Stigma is a big thing that can hinder the success of mental health programs. Some respondents indicate this in multiple statements.

*"The stigma must be eradicated, damaging ...."*

*"One of the problems we encountered is yes stigma as well. The stigma is very disturbing. And worse yet, the stigma is not just in society. Sometimes health workers also still have a strong stigma with ODGJ."*

### Unending confinement (pasung) for people with severe mental illness

One of the mental health visions set by Government is how to make West Java free *pasung*/confinement in 2018. Some respondents recounted this inhumane practice still conducted in West Java.

*"Speaking of the confinement for people with severe mental illness, we also have the program, we have been collaborating with the mental hospital, but the scale is not big, just reduce it. Well that again, sometimes that condition is an option that cannot be avoided by the family."*

*"Provincial Government of West Java has launched free *pasung*/confinement in West Java, Ministry of Social Affairs also proclaim Indonesia free *pasung* of 2017 and extended until 2025."*

*"The role of social agency, we work with TPKJM (Mental Health Care Team), and other professionals."*

### Awareness of recovery

Recovery programs initially arise because of the awareness of a country to improve the quality of lives of its people. The main objective is to increase productivity. All stakeholders already know that recovery is essential to be the primary goal of them. Recovery is one indicator of successful treatment for patients with mental disorders. The following opinion states this

*"If in my opinion recovered was developed by patients desire."*

*"Yes, recovered could happen if patients can perform daily activities well, although they have limitations due to illness."*

### Efforts to overcome mental health challenges

Community Mental Health Centre (CMHC) service is one way to accomplish recovery, as stated by the following opinions.

*"Handling mental disorders cannot be alone. There must be multi-sector cooperation, both medicine, social, security, everything must remain involved. For instance, the patients must keep preparing their BPJS/insurance or their identity card. And also, the medicine must be available at the public health center."*

*"Actually, we initially focus on education and promotion, but it turns out that in different fields, for example, what should be done by the Government has not run properly, so we end up doing various social rehabilitation and recovery activities. We do everything, except curative."*

### Continuity care/follow up/home visit and early Intervention

Home visits are one way to meet a patient. However, the activity is done by asking "Kader"/helper in society to assist. One of the respondents said this in his expression.

*"If the rehabilitation unit is more about how the patient adapts to life later after he comes home. Yes, one of the obstacles faced maybe we*

*have not maximized in the application of rehabilitation. The home visit is essential."*

The team involved is based on multidisciplinary/Community Mental Health Teams (CMHT). Early Intervention is one way of dealing with mental disorders before it gets so severe. Some respondents stated the importance of early detection.

*"Handling mental disorders cannot be alone, and there must be multi-sector cooperation, both medicine, social, security, everything must remain involved. The patients must keep preparing their insurance or their identity card. And also, for the health problem, the medicine must be available in the public health center."*

### Pasung (confinement for people with a mental disorder)

Some respondents expressed their approval that the confinement must eradicate, and fortunately, this problem already entered into a government program.

*"Seida (Governor assistant) as coordinator, but only limited to the free confinement project because of those projects categorized as the most priority project."*

*"We have people in every sub-district to control and report case findings."*

### The existence of local regulation

In running a mental health program, proper local regulations are indispensable as a basis. The support of the Government and local government is particularly needed in issuing regulations that protect people with mental disorders, seek medical treatment of mental disorders, and make rehabilitation efforts back into the community. The stakeholders need this as the foundation for the implementation of the program. Some respondents stated in the following statement.

*"The policy is essential, make the funds available."*

*"We are again developing the current one."*

## DISCUSSION

### Condition in the mental health program

From the literature, there is no single source that mentions hospital-based services to be the best services for the patient with a mental health problem. Scientific evidence suggests that the approach of community-based service alone is not able to produce maximum results (Flannery et al., 2011). However, the psychological method of the community and its integration with the hospital/inpatient service currently been recognized and has strong evidence of its effectiveness (Alberta et al., 2012; Eaton & Agomoh, 2008; Magnusson & Lützén, 2009). According to Hawkins and Tilman (2011), the biggest challenge of implementing the community's mental health program in developing countries lies in three things, namely lack financing, human resources, and infrastructure. For instance, in developing countries such as Vietnam, community mental health projects for people with schizophrenia and epilepsy have been conducted since 2000, with coverage of 63 provinces and service levels of 64% (Ng et al., 2011).

Some countries in the world, such as Finland and Norway, started the concept of community mental health without the central government's intervention. The implementation of mental health

services differs significantly from one municipality to another (Ruud & Hauff, 2002; Salokangas et al., 1985). Thus, there are also countries such as Britain, Australia and East Timor which started this program due to political interests and the implementation of their state health laws (Elstad & Eide, 2009; Hawkins & Tilman, 2011; Malone et al., 2008; Mcinerney et al., 2010; Tirupati et al., 2010). However, not all countries can apply the concept of mental health in society. When we look at the developed countries, the ratio of beds and patients varies. It starts from 5/100.000 population in Italy, up to 135/100.000 population in the Netherlands (World Health Organization, 2017). This condition is different from developing countries, where a smaller number of hospital available.

The Indonesian government already make a step toward improvement of mental health service. Currently, several reports indicate that health facilities in Indonesia at district level start providing mental health services. The facilities expected to facilitate people with mental disorders get treatment close to their living place. The number of a public health center that offers mental health services is 4,182 from 9,005 public health center or 46, 44 per cent (Ministry of Health, 2017). The number of general hospitals that provide mental health services, both outpatient and inpatient is 249 out of district hospital/city hospital or 55.95 per cent (Ministry of Health, 2017). Although it was noted that 46.44% of public health center had provided services for mental disorders, the treatment gap still not reduce (Ministry of Health, 2017).

The greatest challenge of implementing a community mental health program in small and developing countries lies in three things: lack of financing, human resources, and infrastructure. Learning from the Eastern Timor, Hawkins and Tilman (2011) mentions

"There are things that we can do to overcome the problem above on redefining the concept of mental health and make it different from common illness. We can give inputs to financing and maximizing existing financing to do training, staff development, and the addition of facilities and infrastructure".

The word "community" gives meaning contrary to the term "hospitalization". "Community" in health subject is often associated with demographic or geographic concepts (Ritter & Lampkin, 2011). In mental health, the word "community" not only means about the service of mental health in the community but also serves as a symbol that distinguishes the mental health service in society with mental health service in the hospital (Ritter & Lampkin, 2011). To make things easier, sometimes the mental health expert calls the community "a concept opposite to the hospital, if you think of the hospital and its inpatient services, then community care is the opposite" (Barrett & Parker, 2006). This trend focuses on decreasing the number of beds in mental hospitals gradually and moving them toward community services.

Furthermore, it is aimed to make clients more independent in their activities at home or "health care such as home". They have

some expectation that more patients can reach their best potential after they have been ill (Malone et al., 2008). In conclusion, the concept of community care has a basis of freedom, responsibility, future-oriented, filled with elements of novelty, progressiveness, and autonomy, in contrast to the idea of hospitalization that is more inclined towards the old, traditional, confined, full of rules. However, on the one hand, the concept of hospitals also has a positive outlook, which is associated with a sense of security, protection, full service, and acceptance (Barrett & Parker, 2006).

Community mental health services, at the forefront, generally consist of two concepts. The first service integrated with Primary Health Centre (PHC) and the second is by establishing a Community Mental Health Centre (CMHC) either in coordination with PHC or directly to the hospital/mental hospital (Barrett & Parker, 2006). The work patterns implemented by PHC and CMHC are generally the same. One that distinguishes is the process of case finding. PHC begins with the discovery of cases within the building/in the form of a person when they seek health services at PHC. Subsequently, the health worker visits home, while CMHC receives reports by telephone calls from patients in the community, and follow-up patients who discharge from the mental hospital. CMHC officers working in-hospital services are generally in two parts. The first is in the mental health section of the community which is usually integrated with outpatient care. Second the ER Mental health officers, where they also "screen" incoming patients. If the patient does not meet the criteria for hospitalization, it is more suitable for outpatient treatment (Barrett & Parker, 2006).

However, when the Government tried to implement this program, several problems arose namely lack of EBP (evidence-based practice), inadequate policy in mental Health, low client participation and *pasung* (confinement) for patients with severe mental illness (Minas & Diatri, 2008). The least "evidence base" for the concept of mental health makes it difficult for policymakers to make decisions, implement the programs and conduct comprehensive research (Alberta et al., 2012). Moreover, a study can be used as evidence or tool for negotiations with stakeholders, especially regarding financing as it contains data (Gillis, 2011). Also, there is a limited publication of research which discusses the effects of psychopharmacology on patients. Various research has been done only to support circulation, rather than the benefit of patients. Drug companies usually conduct this research in promoting their products (Gisev et al., 2010). A study in Finland mentioned that the problem of medicine for people with severe mental illness occurs in antipsychotic drugs (34.4%), antiepileptic (9.6%) and antidepressants (9.6%) (Gisev et al., 2010).

The implementation in Indonesia of the mental health act is not adequate. Article 28 of the Indonesian Constitution (UUD 1945) states that every person including the mentally ill person shall have the right to live a prosperous and spiritual life, to live and to have a healthy and healthy life and to be entitled to health services, including mental health (Republic of Indonesia, 2002). Furthermore, 2014 Mental Health act article 34 states that the state is obliged to provide health care facilities (President of the Republic of Indonesia, 2014), as well as article 77, stated the central government and the regional Government responsible and



responsible for providing facilities and infrastructures in the implementation of self-effort ([President of the Republic of Indonesia, 2014](#)). It is also mentioned in the 2009 Health act, the provisions of Article 14 confirm that the Government is responsible for planning, organizing, organizing, fostering, and supervising the implementation of equitable and affordable public health efforts ([President of the Republic of Indonesia, 2009](#)). The Government's responsibilities shall be devoted to public services performed in the health sector.

In term of client participation, the condition in implementing the program is deficient and tends to be passive, constrained by the time, cost, and stigma ([Tait & Lester, 2005](#)). Sometimes treatment is homogeneous based on the package system. Treatment is limited to drugs. Therapy that makes patients "tell stories/counseling" is not present. CMHC is trying to shorten this distance. Because it focuses on healthy people's lifestyle, CMHC seeks to provide an alternative therapy that is not just drug focused. Social skill therapy, group therapy and other psychological therapies such as Cognitive Behavioral Therapy (CBT) are encouraged ([Kukla et al., 2016](#)). With these various therapeutic options, patients are empowered to overcome their problems. Patients are asked and given knowledge about their rights and share their experience and giving the direction of what they should do ([Tait & Lester, 2005](#)).

Furthermore, Abuse of ODGJ often occurs, not only using tools such as wood that is given a hole for the feet to keep it from moving, but also isolation. Isolation is the act of confining the patient alone without consent or by force, in a room that is physically restricted to exit or leave the room or area ([Puteh et al., 2011](#)). According to Indonesian law, people who conduct this shackle act shall be punished with imprisonment for a maximum of 8 years ([Khadafi, 2017](#)).

From the opinion above, it could be implied that recovery is a concept that possible to occur in patients with mental disorders. Recovery is a particular process, different from one person to another. Recovery is the journey of a person who has a mental disorder by exploiting all the potential and resources they have. Recovery, therefore, varies from person to person. Another opinion said that recovery is a person's ability to work with the maximum, although the patients still have limitations due to the mental illness ([Anthony, 1993](#); [Leamy et al., 2011](#)). For instance, a person who has schizophrenia has a distraction in thinking, so they work rather slowly. As long as they are still able to do activities and beneficial to others, this categorizes as recover ([Nelson et al., 2001](#)).

#### *Overcome the challenge*

According to [World Health Organization \(2003\)](#), four things can be developed to overcome the problems above, that is improving (1) staff and infrastructure: In the form of numbers, training, evaluation of government policies and the establishment of mental health organizations in the community, (2) Financing and resources: Integrating mental health into PHC services, increasing drug financing and other therapeutic activities, and (3) Education and training: increasing activities and procuring books, brochures and mental health education tools. A study in

the United States mentions that a mental health worker who attended regular education and training has a good attitude and hope for their patients ([Tsai et al., 2011](#)). They work in the community, sending mental health specialists to the community to organize activities, get feedback from family and community and organize regular meetings and community activities ([Wilder et al., 2013](#)).

One of the benefits of home care with the concept of community life is the reduction of persecution rates such as assault, rape, or non-persecution crimes such as theft, robbery and fraud to psychiatric patients in the last four months ([Segal & Burgess, 2008](#)) at home reduces maintenance costs and length of patient day-care ([Segal & Burgess, 2009](#)). Patients and families have self-sufficient in managing the disease with "Community Mental Health Centre" assistance ([Fukui et al., 2011](#)).

The early Intervention aims to find and solve mental problems at the onset of symptoms. Including in this case prevention program, mental disorders in children due to mental illness generally begin to show signs and symptoms in adolescence ([Miech et al., 2008](#)). It is estimated that the onset of psychiatric illness starts when a person is 15-24 years old ([Zwaanswijk et al., 2011](#)). Thus 14-22% of adolescents have mental problems that can develop into mental disorders ([Simmonds et al., 2001](#)). Young people tend to have emotional issues that can develop into mental illness and could potentially get more significant if not handled directly ([Goldstrom et al., 2006](#)).

Moreover, the focus of detection and Intervention should look at other factors such as demographics and income. Concerning demographics and population, villagers have more complex mental problems and lower family support than people who are working in the city. Access to entertainment and service affects their mental state. Usually in the village, people who are mentally ill tend to be ostracized ([Minas & Diatri, 2008](#); [Sartore et al., 2008](#); [Tirupati et al., 2010](#)). low-income people tend to have a higher potential for mental disorders. Furthermore, people with mental illness can lead to poverty, helplessness, and isolation ([Lund et al., 2010](#); [Tello et al., 2005](#); [Tirupati et al., 2010](#)).

The eradication program for confinement started since the instruction of Minister of Home Affairs Number PEM.29/6/15 dated 11<sup>th</sup> November 1977 addressed to All Governor in Indonesia, which contains prohibition do confinement (*pasung*) to people with a mental disorder ([Patmisari, 2014](#)). Based on Ministry of Health in 2010 which organizes free Indonesia *pasung*/confinement program, the Indonesian Ministry of Health has developed guidelines for the handling of siege, advocacy to stakeholders in provincial and district and municipal, to improve the capacity of health workers in the public health center and general hospital handling mental health problems ([Ministry of Health, 2017](#)). Despite the existing Guidelines for *pasung* Prevention, in fact, most health workers doctors, nurses and midwives do not know the existence of free *pasung*/confinement program and many health workers still have not received a proper mental health training.

## CONCLUSION

The stakeholders have realized that recovery is essential for patients who are suffering from mental disorders. Recovery can replace the term "cured" in psychiatric patients. This condition is possible because recovery means the state of patients who can function optimally, even though they still have the disease. However, this condition is difficult to achieve because the focus of mental health service still does not have full collaboration with the community. The CMHN concept cannot be applied fully because of several reasons, uncomprehensive mental health policy and lack of research or less using of EBP in the application of mental health services. One example is a program conducted by IPKJI and KPSI. The suggestion, more research for policies and regulations, policy applications and research-based programs, and needs a pilot project and socialization for recovery concept.

## Declaration of Conflicting Interest

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## Authors Contribution

Except for the listed below, these authors contributed equally to this work (proposal, literature review, and analysis). **G.E.N.**: Lead/first researcher, initial presentation for research grants, data gathering, government permits, final presentation at the institution, last revision for journal submission. **R.B.K.**: Second researcher, government permits, and final presentation at the institution. **B.M.**: Third researcher, data gathering, editing and last revision for journal submission.

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ORIGINAL RESEARCH

## EFFECTIVENESS OF DIABETIC FOOT EXERCISES USING SPONGES AND NEWSPAPERS ON FOOT SENSITIVITY IN PATIENTS WITH DIABETES MELLITUS

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**Abstract**

**Background:** Diabetes mellitus is a critical public health problem, and its prevalence in Indonesia remains high. Diabetes mellitus may cause complications, one of which is neuropathy that can impair foot sensitivity. This requires a treatment by doing diabetic foot exercises using sponges and paper.

**Objective:** To examine the effectiveness of diabetic foot exercise using sponges and newspapers on foot sensitivity in patients with diabetes mellitus.

**Methods:** This is a quasi-experimental study with pretest posttest with a control group research design, which was conducted at Public Health Center Depok III, Sleman Regency, Yogyakarta, Indonesia. An accidental sampling technique was used to select participants, with a total sample of 108 respondents consisting of 36 respondents in a control group, 36 respondents in a sponge group, and 36 respondents in a newspaper group. Data were analyzed using Wilcoxon and Mann-Whitney test.

**Results:** Among the three groups, only those who received foot exercises using sponges and newspapers had a significant effect on foot sensitivity ( $p < .05$ ). However, there was no significant difference on the effect of foot exercise on foot sensitivity between sponges and newspapers group ( $p > .05$ ).

**Conclusion:** The use of sponges and newspapers in foot exercise could significantly improve foot sensitivity in patients with type 2 diabetes mellitus. It is therefore recommended for nurses to provide the foot exercise as a part of nursing practice in both hospitals and community health centers.

**KEYWORDS**

diabetes mellitus; diabetic foot; peripheral neuropathy; sensitivity

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## INTRODUCTION

The number of persons with diabetes mellitus increased from 108 millions in 1980 to 422 millions in 2014 ([World Health Organization, 2016](#)). The global prevalence of diabetes has almost doubled from 4.7% to 8.5% in the adult population ([World Health Organization, 2016](#)). According to [International Diabetes Federation \(2017\)](#), the number of people with diabetes worldwide in 2017 among 20-79 years old was approximately 425 million and is expected to exceed 629 million in 2045. The top three countries/territories for some people with diabetes are China (114.4 million), India (72.9 million), and the United States (30.2 million). Indonesia ranks sixth as the country with the highest

number of DM patients as many as 10.3 million ([International Diabetes Federation, 2017](#)).

Diabetes mellitus can cause microvascular disease (small blood vessels) that cause neuropathy, which leads to foot ulcers ([Smeltzer et al., 2010](#)). Consequently, sensory loss occurs in both feet and hands, which results in a disturbance of sensitivity to the foot causing inability to feel pain, heat or cold, tingling sensation, feeling like being pierced and numbness ([Baradero et al., 2009](#)). Foot sensitivity is significant for patients with diabetes mellitus because it can cause trauma. Patients who experience a decrease in foot sensitivity will lose sensation to feel pain



although the foot is injured, which potentially cause of ulcers due to the absence of foot care (Sari, 2015). Foot exercise activity is one of therapies that can be given to people with diabetes. Diabetic foot exercises are a series of foot movements carried out by someone who has diabetes mellitus to prevent injury and help facilitate blood circulation in the feet (Setyoadi, 2011). A study has proven that routine diabetic foot exercises are very effective in increasing foot sensitivity (Rusandi et al., 2015).

Diabetic foot exercises are usually done using a medium such as paper, or newspaper. Newspaper is used because it has a thin sheet and a smooth surface that will not injure the soles of the foot, and it is easily torn by the foot. Endriyanto et al. (2013) showed that one-time foot exercise for patients with diabetes mellitus using newspapers could increase foot sensitivity in patients with type 2 diabetes. In addition to the newspapers, sponges are considered effective in increasing the foot sensitivity in patients with diabetes mellitus type 2, as indicated by a previous study. Sponges' structure is porous with a soft and very flexible surface that can be used in everyday life as a bath sponge and rubbing tool (Aryulina et al., 2007).

Our preliminary study at Depok III Sleman Yogyakarta Health Center in ten patients with diabetes mellitus found that six patients had never done foot exercises at home, and four patients routinely did foot exercises at home but did not use media. The average of blood sugar among those patients was 113-190 mg/dl. From the results of our examination of foot sensitivity with monofilament, it was found that all patients experienced a decrease in foot sensitivity, less feeling of touch sensation in more than 3 points on both feet. Therefore, this study aimed to examine the effectiveness of diabetic foot exercise using sponges and newspapers on foot sensitivity in patients with diabetes mellitus, and to compare the effect of both media.

## METHODS

### Study Design and Sample

This was a quasi-experimental study with pretest posttest with nonequivalent control group. Population in this study was all patients with diabetes mellitus at Public Health Center of Depok III, Sleman Regency, Yogyakarta. Sample was calculated using Slovin formula with a margin error of 5% in 148 patients as a total population. A total of sample was 108 respondents, which assigned in a control group ( $n=36$ ), a sponge group ( $n=36$ ), and a newspaper group ( $n=36$ ), selected using accidental sampling technique. The inclusion criteria of the sample were a patient with type 2 diabetes mellitus, length of disease is > 2 years, aged 35-64 years, and willing to follow the entire research process. The exclusion criteria were patients with diabetes mellitus who had diabetic foot ulcers.

### Instruments

Foot sensitivity was measured using a monofilament 10 g. Monofilament was placed perpendicular to the skin. The emphasis was made as far as monofilament could be bent and held for 2-3 seconds. Monofilament was used at 10 location points on the left and right feet, namely on the first toe, the first,

third and fifth metatarsal heads, three plantar parts from the heel, and the dorsum of the foot. The examination was carried out before and after diabetic foot exercises, with scale 0-10 to indicate the number of points that can feel monofilament. The higher the score, the better of foot sensitivity.

### Intervention

The first group of respondents received diabetic foot exercise using a sponge (with a size of 30 cm × 25 cm × 1 cm), and the second group using two-sheets newspaper (with a size of 70 cm x 58 cm) for the exercise. Both groups performed the exercise in both feet for 10 minutes 3 times a week (1st day, 4th day, and 7th day). The third group did not receive any treatments as a control group.

### Data Collection

This research was conducted at Public Health Center of Depok III, Sleman Regency, Yogyakarta from 4<sup>th</sup> April to 15<sup>th</sup> June 2018. The researchers led diabetic foot exercises on the first and seventh day and measured the foot sensitivity, assisted by two assistants. The first assistant is the nurse on duty at the public health center. The second assistant is a nursing student at Respati Yogyakarta University. The assistants helped the researchers to lead the 4th-day of diabetic foot exercise and measured the sensitivity of the feet of some respondents. The foot sensitivity of the pretest was measured before (the 1st day) and after diabetic foot (the 7<sup>th</sup> day).

### Data Analysis

Based on the results of Kolmogorov Smirnov, the data were not normally distributed. Therefore, Mann Whitney and Wilcoxon test were used for data analysis.

### Ethical Consideration

The ethical approval was obtained from Ethics Commission of Respati Yogyakarta University with approval number of 110.2/UNRIYO/PL/III/2018. The study permission was also obtained from the Head of Public Health Center of Depok III, Sleman Regency, Yogyakarta. An informed consent was signed to all respondents prior to data collection.

## RESULTS

Majority of participants aged 56-65 years, with most likely equal gender. Most of participants have the length of suffering from diabetes mellitus for less than 10 years (Table 1). In Table 2, it shows that those who received sponge and newspaper intervention had a higher delta median than those in the control group. The highest foot sensitivity in both intervention groups was in the left foot than the right foot.

And among the three groups shown in Table 3, only those who received foot exercises using sponge and newspaper had a significant effect on foot sensitivity ( $p < .05$ ). Those in the control group significantly had no impact on foot sensitivity. Further, it shows that there was no significant difference on the effect of foot exercise using sponge and newspaper on foot sensitivity among patients with diabetes mellitus ( $p > .05$ ) (Table 4).



**Table 1** Characteristic of Respondents

Category	Control Group		Sponge Group		Newspaper Group	
	f	%	f	%	f	%
<b>Age (years)</b>						
35-40	4	11.1	0	00.0	2	5.6
41-55	13	36.1	18	50.0	6	16.7
56-64	19	52.8	18	50.0	28	77.8
Total	30	100.0	36	100.0	36	100.0
<b>Gender</b>						
Female	15	41.7	22	61.1	16	44.4
Male	21	58.3	14	38.9	20	55.6
Total	36	100.0	36	100.0	36	100.0
<b>Length of disease</b>						
<10 years	8	22.2	28	77.8	26	72.2
>10 years	28	77.8	8	22.2	10	27.8
Total	36	100.0	36	100.0	36	100.0

**Table 2** Foot Sensitivity of Pretest-Posttest Diabetic Foot Exercises Among Groups

Group	Location	Foot Sensitivity Pretest-Posttest			
		Min	Max	Median	Delta Median
Control	Right Foot	0-1	8-8	6.0-6.5	0.5
	Left Foot	0-2	8-9	7.0-7.5	0.5
Sponge Intervention	Right Foot	2-5	9-10	7.5-10.0	2.5
	Left Foot	0-3	9-10	7.0-10.0	3.0
Newspaper Intervention	Right Foot	3-5	9-10	8.0-10.0	2.0
	Left Foot	1-7	8-10	7.0-10.0	3.0

**Table 3** Effectiveness of Foot Exercises on Foot Sensitivity

Group	N	Variable	Delta Median of Foot Sensitivity	p-value
Control	36	Pretest-Posttest Right Foot	0.5	0.798*
		Pretest-Posttest Left Foot	0.5	0.864*
Sponge Intervention	36	Pretest-Posttest Right Foot	2.5	0.000*
		Pretest-Posttest Left Foot	3.0	0.000*
Newspaper Intervention	36	Pretest-Posttest Right Foot	2.0	0.000*
		Pretest-Posttest Left Foot	3.0	0.000*

\*Wilcoxon Test

**Table 4** Differences in the Effectiveness of Diabetic Foot Exercises Using Sponge and Newspaper on Foot Sensitivity

Variable	N	p-value
Pretest Sponge Intervention Group	36	0.673**
Pretest Newspaper Intervention Group	36	
Posttest Sponge Intervention Group	36	0.584**
Posttest Newspaper Intervention Group	36	

\*\*Mann Whitney Test

## DISCUSSION

Our study aimed to examine the effectiveness of diabetic foot exercise using sponges and newspapers on foot sensitivity in patients with diabetes mellitus, and to compare the effect of both media. The result showed that diabetic foot exercises using sponges and newspapers have significant effects on foot sensitivity. Sensitivity is the ability to feel various stimulations such as pain, pressure, and movements that activate receptors to respond (Dorland, 2011). The increase of minimum-maximal value after foot exercises showed that diabetic foot exercises using sponge and newspaper are useful for increasing foot sensitivity.

Our findings supports the study stated that foot exercises can help facilitate blood circulation, strengthen small muscles, and prevent foot deformities (Misnadiarly, 2006). In addition, foot exercises help strengthen the foot muscles and help blood circulation to the lower extremities. However, foot exercises provides stimulation to the nerve points associated with the pancreas to produce insulin through nerve points located on foot, and prevent the occurrence of complications in the foot and increase the sensitivity of body cells, especially the foot sensitivity (Mangoenprasodjo & Hidayati, 2005). In addition, foot exercises can lead to recovery peripheral nerve function by inhibiting aldose reductase which leads to decreased Nicotinamide Adenine Dinucleotide Phosphate Hydroxide (NADPH) which will increase endothelial cell activity. A decrease in NADPH can contribute in increase the synthesis of nitric oxide (NO) which will eliminate hypoxia in the nerves. Enhancement Nitric oxide (NO)-derived endothelium can also cause recovery of nerve function in diabetic peripheral neuropathy patients. The action of diabetic foot exercises can increase nitric oxide and inhibit production excessive protein kinase C (McIntosh et al., 2003).

Although there was no significant difference on the impact of foot exercise between sponge and newspaper group, but the median of foot sensitivity was slightly different, which is higher in the sponge group compared to the median in the newspaper group. A sponge was more challenging to tear than the newspaper. Based on our opinion, using a sponge, patients need to focus the strength and energy on the feet to tear the sponge and do the maximum foot exercises. The more foot pressure is given, the better the stimulation of blood circulation in the area of the foot. However, both media are effective, as indicated in our study.

With our study results, foot exercises using newspaper and sponge media can be included in the nursing intervention to prevent a decrease in foot sensitivity due to chronic complications of diabetes mellitus. Diabetic foot exercises are comfortable, safe, and affordable. In addition, it can be performed in daily activities.

### Limitation of the Study

The short period of duration and foot exercise might be considered as a limitation. Thus, future research needs to pay

attention to this issue, which the foot sensitivity could be measured in time series. In addition, ankle brachial index can be used as another variable for measuring the effectiveness of foot exercise.

## CONCLUSION

Foot exercises using sponge and newspaper effectively improve foot sensitivity in patients with type 2 diabetes mellitus. It is therefore recommended for nurses to provide the foot exercise as a part of nursing practice in both hospitals and community health centers.

### Declaration of Conflicting Interest

There was no conflict of interest in this study.

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### Authors Contributions

This study from beginning to end was conducted by SF, AS, and NHR. Study conception and writing draft were done by first author. Data collection by SF, AS and 2 assistants (AW and PD), data analysis and interpretation were done by SF, AS, and NHR. All work in this study was carried out by the author.

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**ORIGINAL RESEARCH**

## APPLICATION OF HEALTH PROMOTION MODEL FOR BETTER SELF-CARE BEHAVIOR IN PATIENTS WITH DIABETES MELLITUS

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**Abstract**

**Background:** Diabetes mellitus (DM) is a major health problem in the world. DM patients should be able to perform self-care behavior. Diabetic self-care behavior is an effective strategy for controlling diabetes.

**Objective:** The purpose of this study was to examine a health promotion model in patients with type 2 diabetes mellitus.

**Methods:** A cross-sectional design was used, which involved 177 patients with type 2 diabetes from primary health care in Denpasar Bali Indonesia with a stratified random sampling. Independent variables were personal factors (age, sex, education, body mass index, socioeconomic status, self-motivation, illness perception, and belief), self-efficacy, and family support. The dependent variable was self-care behavior. A structural equation model was used to confirm the hypothesis model.

**Results:** Personal factors (education, socioeconomic, and perceptions) ( $t = 2.891$ ) and family support ( $t = 5.746$ ) were associated with self-care behavior. Self-efficacy did not affect self-care behavior ( $t = .139$ ).

**Conclusion:** Diabetes self-care behavior is influenced by socioeconomic status, level of education, perception of the illness, and family support. Therefore, it is suggested for nurses to apply the health promotion model approach to increase self-care behavior of patients with type 2 diabetes mellitus.

**KEYWORDS**

diabetes mellitus; self-efficacy; family support; personal factors; self-care behavior

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## INTRODUCTION

One of main problems of diabetes management is behavior of patients towards their disease, which is influenced by different concepts and beliefs. Those who have gained knowledge about the management of the disease do not always apply the desired behavior change (Sharoni & Wu, 2012). Lack of attention to self-care behavior is a major cause of failure in the diabetes health program (Vazini & Barati, 2014) although lifestyle behavior is significantly associated with the risk of type 2 diabetes mellitus (DM) (den Braver et al., 2017). The evidence shows that the self-care behavior among diabetic patients is still low (Vazini & Barati, 2014).

Globally, it is more than 346 million people are estimated to have diabetes. This incidence is expected to rise to 592 million by 2035 (Bhandari & Kim, 2016; Waki et al., 2016). The incidence and

prevalence of type 2 diabetes in many parts of the world increased, about 20% -25% of people aged over 65 years in the United States and Korea suffer from diabetes (Al-Amer et al., 2016; Kusnanto, 2017; M. Song et al., 2015). In Indonesia, the number of diabetic patients increased from 8.4 million in 2000 to around 21.3 million in 2030, which most likely occurs at a young and productive age. The second report shows an increase in the number of people with DM as much as 2-3 times in 2030 (Kusnanto, 2017). In Denpasar, the number of new incidences of diabetic patients by 2016 in all health centers is 3,400 incidents.

Diabetic patients have chronic complications from their disease (Kav et al., 2017), which affects mental and physical health. The other chronic complications are eye, kidney, cardiovascular, and nervous disorders. Prevention and cure of efficient strategies are



needed to reduce the burden of the medical and economic. However, the problem of diabetes patients can be solved with self-care. Self-care will improve the quality of life and prevent acute and chronic complications of diabetes (Laxy et al., 2014; Vazini & Barati, 2014). In self-care, patients are responsible for managing day-to-day care for their illness (Kusnanto, 2017; Laxy et al., 2014).

Diabetes management is related to lifestyle management, meal planning, physical exercise, medication adherence, weight control, monitoring blood glucose or urine levels, and psychological management of patients (Kusnanto, 2017). Adherence to self-care behaviors is necessary to prevent diabetes complications and improve the quality of life (Seo et al., 2017). A study by M. Song et al. (2015) explains that self-care behavior is an important strategy for achieving control of blood sugar, blood pressure, and cholesterol. Some research suggests that self-care behaviors improve health and quality of life, increase patient satisfaction, reduce healthcare costs, provide better symptom management, and improve survival (Vazini & Barati, 2014).

To explain health improvement behavior among diabetic patients, this present study uses Pender Health Promotion Model as a comprehensive theoretical model (Dehdari et al., 2014), which explains the personal factors, perceived benefits of action, perceived obstacles to action, perceived self-efficacy, activity influences, interpersonal influences, and situational influences are important elements in behavioral change (Kurnia et al., 2017). Although this model can be used to explain various health behaviors, only a few studies have used this model (Dehdari et al., 2014). In Bali, there is no single study that has investigated the application of health promotion models on self-care behavior in diabetic patients. The application of health promotion models could help health service providers to proper interventions. Therefore, the aim of this study was to examine the application of health promotion models in patients with type 2 diabetes mellitus in the Denpasar Health Centre area, Bali Indonesia.

## METHODS

### Study Design and Sample

This study employed a cross-sectional design with 177 diabetic patients who were selected using a stratified random sampling. The inclusion criteria of the respondent were: a) aged 20-65 years (age group of >80 years may be difficult to read, low prevalence of type 2 DM at age <20 years (Lee et al., 2016), and b) holding high school educational background as minimum level of education.

### Instruments

The instruments in this study included:

- 1) *Demographic data*, consisting of 8 questions: respondent's name (initial), age, gender, weight, height, Body Mass Index (BMI), education, occupation, income, length of suffering from diabetes mellitus.
- 2) *Motivation* was measured using a modification of the questionnaire derived from the Treatment Self-Regulation Questionnaire (TRSQ) developed by Ryan and Deci (2000).

The questionnaire is composed of 19 statements consisting of reasons for undergoing medication and blood sugar checks (8 items) as well as reasons for complying with diet and exercise rules (11 items) ( $r = .367$ ; Cronbach's  $\alpha = .909$ ).

- 3) *Illness perception* was measured using The Brief Illness Perception Questionnaire (IPQ-R brief) (Broadbent et al., 2006). The questionnaire consists of 8 items with 11 scale points (range 0-10) ( $r = .506$ ; Cronbach's  $\alpha = .812$ ).
- 4) *Trust* was measured using System of Belief Inventory (SBI) - 15R to obtain religious beliefs (belief in transcendence and transcendent meaning about human life) and the presence of religious practices (sub-items of belief, 10 items), and support received by the community religious (support items, 5 items: 3, 5, 7, 9, 13). Each item's score consists of a 4-point Likert scale (from 0 to 3) (Ripamonti et al., 2010) ( $r = .467$ ; Cronbach's  $\alpha = .946$ ).
- 5) *Self-efficacy* was measured using diabetes management self-efficacy scale (DMSES) questionnaire (Bijl et al., 1999), which consists of 15 questions with a choice of confidence ranges in the ability to do activities or not ( $r = .362$ ; Cronbach's  $\alpha = .840$ ).
- 6) *Family support* was measured using the Hensarling Diabetes Family Support Scale Questionnaire adapted from the Hensarling's Diabetes Family Support Scale (HDFSS) (Hensarling, 2009). The scale consists of 29 question items ( $r = .395$ ; Cronbach's  $\alpha = .940$ ).
- 7) *Self-care behavior* was measured using a modification of the questionnaire derived from The Summary of Diabetes Self Care Actions (SDSCA) developed by Toobert et al. (2000) ( $r = .743$ ; Cronbach's  $\alpha = .812$ ).

All instruments were translated into Indonesian language. Permission was obtained to use all instruments. All items were rated using a Likert scale. The higher score denotes good level and lower score denotes bad level. The scoring process was not affected by demographic factors, such as age, gender, level of education, BMI, and socioeconomic status.

### Data Collection

Data collection was conducted from January 9 to February 9, 2018. The research was conducted in all community health centers in the Denpasar working area. The researchers coordinated with nurses at the community health centers in regards to the research plan. The nurses provided information to diabetic patients to take a part in research activities. The researchers then selected the respondents who met the inclusion criteria. Prior to data collection, the research objectives, benefits, time, respondent rights were explained. If the participants agreed to participate, they signed an informed consent, and followed by filling in all questionnaires.

### Data Analysis

A variance or component-based structural equation model called PLS (Partial Least Square) was used for data analysis. A model analysis of the structural equation model in PLS consists of an inner model that specializes in the relationship between latent variables (structural model), and an outer model that specializes in the relationship between latent variables with indicators. The

model evaluation consists of two evaluation parts: 1) Evaluation of the measurement model or outer model, which is evaluated based on the validity results and the reliability of the indicator. The indicator is said to be valid if it has an outer loading value above .5 and a t-statistic value above 1.96. The reliability was examined using the indicators of the construct that form them. 2) Evaluation of structural model or inner model, which aims to know the magnitude of influence or relationship of causality between variables in the study, namely by obtaining the value of R square or coefficient of determination. 3) Hypothesis testing ([Ghozali, 2008](#)).

#### Ethical Consideration

The respondents involved in this study have been given an appropriate informed consent. This study was approved by the

Research Ethics Committee Faculty of Nursing, Airlangga University (Approval Number: 611-KEPK).

## RESULTS

#### Characteristics of Respondents

Table 1 shows that the average age of the respondents was 57.35 years, with the average BMI of 22.96 kg/m<sup>2</sup>, and average socioeconomic status of Rp 1,532,800. Most respondents had a high school educational level, and their self-motivation was in a good category. Majority of participants had poor perceptions of disease, and poor self-efficacy. The family support in diabetic patients was also in a poor category.

**Table 1** Characteristics of Respondents

Characteristics	f = 177	%	Mean	Std. Deviation
<b>Age</b>				
Late adulthood (36-45 years)	3	1.7	57.35 year	4.89 year
Early elderly (36-45 years)	56	31.6		
Late elderly (56-65 years)	118	66.7		
<b>Gender</b>				
Male	94	53.1	-	-
Female	83	46.9		
<b>Education level</b>				
High school	117	66.1	-	-
Higher education	60	33.9		
<b>BMI</b>				
Less	10	5.6	22.96 Kg/m <sup>2</sup>	2.93 Kg/m <sup>2</sup>
Normal	90	50.8		
More	77	43.5		
<b>Socioeconomic status</b>				
Low < 2,173,000	126	71.2	Rp 1.532.800	Rp 1.098.220
High ≥ 2,173,000	51	28.8		
<b>Self-motivation</b>				
Poor	67	37.9	-	-
Good	110	62.1		
<b>Perception</b>				
Poor	94	53.1	-	-
Good	83	46.9		
<b>Belief</b>				
Poor	99	55.9	-	-
Good	78	44.1		
<b>Self-efficacy</b>				
Poor	101	57.1	-	-
Good	76	42.9		
<b>Family Support</b>				
Emotional support				
Good	177	100	-	-
Poor	0	0		
Informative support				
Good	32	18.1	-	-
Poor	145	81.9		
Award support				
Good	62	35	-	-
Poor	115	65		

**Table 1** Characteristics of Respondents (Cont.)

Characteristics	<i>f</i> = 177	%	Mean	Std. Deviation
Instrumental support				
Good	5	2.8	-	-
Poor	172	97.2		
<b>Self-care behavior</b>				
Poor	89	50.3	-	-
Good	88	49.7		

### Relationship Among Variables

Table 2 shows that all variables had a loading factor of  $\geq .6$ . In this study, the Average Variance Extracted (AVE) value was all valid ( $\geq .5$ ). The value of composite reliability in all variables was reliable ( $\geq .7$ ).

**Table 2** Measurement model (inner model)

Variable	Sub Variable	Loading Factor	Average Variance Extracted (AVE)	Composite Reliability
Personal factor	Socioeconomic status	.907	.663	.854
	Education level	.735		
	Illness perception	.792		
Self-efficacy		1.000	1.000	1.000
Family support	Emotional support	.775	.735	.917
	Informative support	.888		
	Award support	.870		
	Instrumental support	0.889		
Self-care behavior		1.000	1.000	1.000

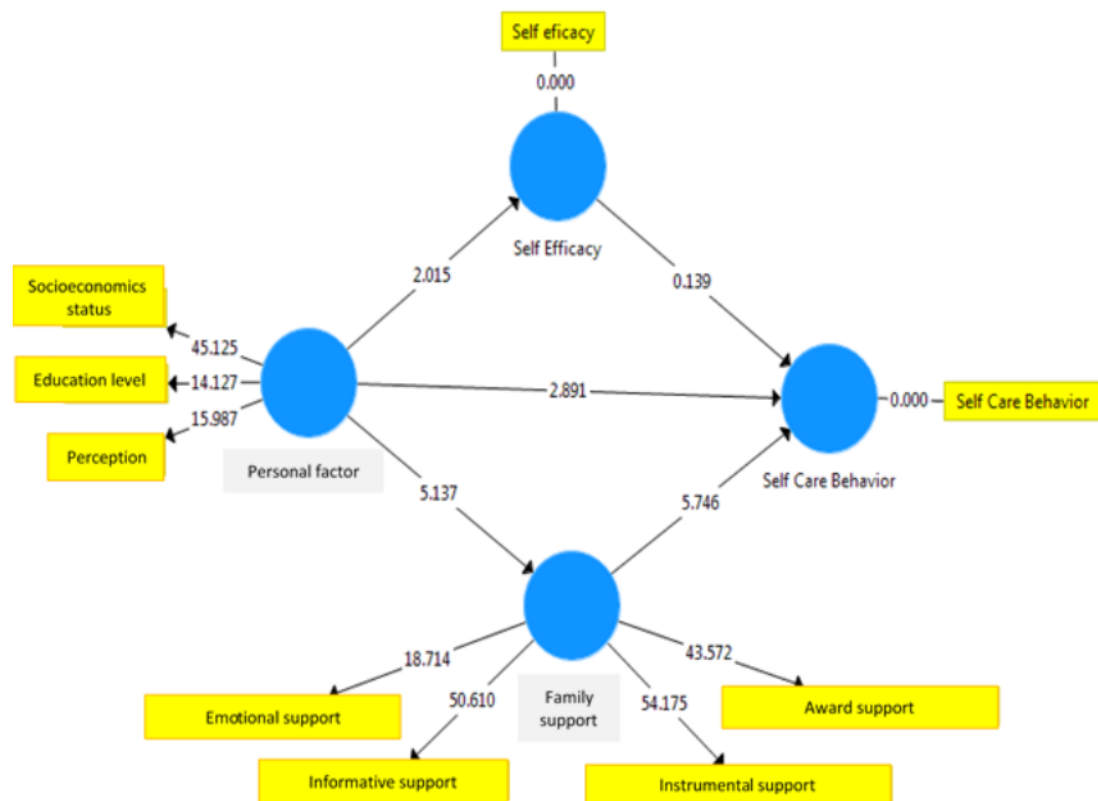
**Figure 1** Structural model

Table 3 T-test results

Relationship between variables	Original Sample	Sample Mean	Std. Deviation	T Statistic
Personal Factors → Self Care Behavior	.208	.212	.072	2.891
Personal Factors → Self Efficacy	.167	.172	.083	2.015
Personal Factors → Family Support	.351	.354	.068	5.137
Self-Efficacy → Self Care Behavior	-.010	-.005	.075	.139
Family Support → Self Care Behavior	.370	.368	.064	5.746

Table 3 shows that personal factors of diabetic patients influenced family support ( $t = 5.137$ ) and self-efficacy ( $t = 2.015$ ). Personal factors ( $t = 2.891$ ) and family support ( $t = 5.746$ ) influenced self-care behavior, but self-efficacy did not affect self-care behavior ( $t = .139$ ).

## DISCUSSION

This study aimed to examine the application of health promotion models in patients with type 2 diabetes mellitus in the Denpasar Health Centre area, Bali Indonesia. An interesting finding was found among variables in the model.

This study found socioeconomic status affects self-care behavior, which was in line with previous studies (Bhandari & Kim, 2016; Compean Ortiz et al., 2016; Hill et al., 2013; Le et al., 2016; Pamungkas et al., 2017). Individuals with low socioeconomic status have low levels of health literacy, stress, and depressive symptoms (Mayberry et al., 2016), and reported less confidence in the ability of self-management of diabetes, and this may be attributable to ineffective blood glucose control. But people with higher socioeconomic status have higher levels of access to health services comparing with those with lower socioeconomic status (Kirk et al., 2015; Yin et al., 2019).

Our findings also found diabetic patients had poor perception of their disease which influences their self-care behavior. Previous studies have shown that patients' adherence to diabetic self-care is related to their perceptions about the disease and its treatment (Van Puffelen et al., 2015). However, self-perception plays an important role in the self-management behavior of diabetic patients. Health perception can affect self-care, diabetes management and several aspects of quality of life (Rostami et al., 2015).

Additionally, the findings revealed that the education level of diabetes patient was in the middle category. Compean Ortiz et al. (2016) explains that those with low education level have poor self-care behavior, or a low probability of involved in diabetes mellitus health behaviors (Bhandari & Kim, 2016). Bhandari and Kim (2016) also adds that the educational status are the important factors of self-care behavior. However, educational status is strongly related to the adequate knowledge which is considered as a basis for self-management behavior in diabetic patients. Increased knowledge has associated with increased DM control (Chourdakis et al., 2014).

Family support variable also had an influence on self-care behavior. In this study, the family support variable influenced 23.2% of self-care behavior. Family support has an important role in physical, mental and socioeconomic support for diabetic patients (Lundberg & Thrakul, 2013). Family support is associated with better self-care behavior and another source that helps individuals with diabetes to improve self-care (Ridi Putra et al., 2016; Wichit et al., 2017). Other research also found family interventions improve diabetes self-management (Baig et al., 2015). In this study, the family support is likely related to emotional support (feeling comfortable, patient values and behavior), appreciation (promoting understanding of stressful events), and information support (providing advice and information), and instrumental (financial support and services) (Y. Song et al., 2017). In addition, the special role given by family members to support diabetic patients is preparing and managing food, encouraging and monitoring physical exercise and monitoring blood glucose and other self-care behaviors (Shi et al., 2016; Wichit et al., 2017). It is very important to improve the self-care of DM patients by involving families in managing diabetes patients.

The limitation of this study was that the setting of the study was limited to Denpasar, which therefore the findings might not be able to be generalized. In addition, variables that affect self-efficacy and family support were not measured, which should be done in future studies.

## CONCLUSION

Diabetes self-care behavior influenced by socioeconomic status, level of education, perception of the illness and family support. The health promotion model can be used to explain health behavior in diabetic patients. The main part that can improve the self-care behavior of diabetic patients is family support. As a nurse, it is very important to involve the family in the management of diabetic patients.

### Declaring of Conflicting Interest

We declare that we have no conflict of interest.

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#### Author Contribution

MMP developed the research proposal, conducted the study, analyzed data, and prepared the manuscript. KK guided and directed the research concepts. CPA guided and facilitated the research instruments. TS reviewed research results and publication texts.

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## ORIGINAL RESEARCH

# EFFECT OF LAUGHTER THERAPY ON DEPRESSION LEVEL IN ELDERLY IN A NURSING HOME, NORTH SUMATRA, INDONESIA

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### Abstract

**Background:** Depression level among elderly remains high in Indonesia. One of efforts to decrease depression is laughter therapy, which is assumed able to lower depression.

**Objective:** This study aimed to examine the effect of laughter therapy on depression level in elderly at Nursing Home of Binjai Integrated Social Service Unit for the Elderly, North Sumatra, Indonesia.

**Methods:** This was a quasi-experimental study with pretest posttest with control group design. Forty-two participants were selected using a purposive sampling, with twenty-one participants were randomly assigned in each group. An experimental group received one-hour laughter therapy for 3 times a week in 4 weeks, and a control group received usual care. Depression was measured using Geriatric Depression Scale-15. Data were collected from April to June 2018. Independent and dependent t-test were used for data analysis.

**Results:** Findings revealed that the level of depression in elderly significantly decreased in the experimental group ( $p < .05$ ), but there was no significant change of it in the control group ( $p = .648$ ). Between the two groups, there was a significant difference in depression level in elderly ( $p < .05$ ).

**Conclusion:** Laughter therapy could reduce depression among elderly. Therefore, this therapy can be used as one of interventions in nursing practice, especially at nursing homes.

### KEYWORDS

elderly; depression; laughter therapy; nursing homes

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## INTRODUCTION

Depression is the most common mental disorder among elderly worldwide (Babatsikou et al., 2017; Pae, 2017; Shaw, 2013). The prevalence of depression in the elderly in the community around the world ranges from 22 to 44%, especially in the elderly group of 60-69 years (Han et al., 2017; Pilania et al., 2017; Taamu et al., 2017). However, depression is the fourth leading cause of disability (Pae, 2017; Peltzer & Phaswana-Mafuya, 2013; Shaw, 2013). In Indonesia, depression occurred in 40% of patients with stroke, 35% of patients with cancer, 25% of patients with Parkinson's disease, 20% of patients with cardiovascular disease, and 10% of patients with diabetes (Taamu et al., 2017; Utami et al., 2018). It is about 5-15% of patients with depression commit suicide every year (Sihombing & Fahila, 2016; Utami et al., 2018). Similar with the setting of our study, which there is a high prevalence of depression in elderly with hypertension, diabetes and other chronic diseases at Binjai Integrated Social Service Unit for Elderly, North Sumatra Indonesia (Sihombing & Fahila,

2016). Therefore, it is very important to provide interventions to reduce depression problems.

The effective intervention in reducing depression in elderly is a combination of both biological and psychological interventions (Lionis & Midlöv, 2017; Ulahannan & Xavier, 2017). Laughter therapy is one of the interventions, which provides a good massage to all internal organs in reducing stress hormone level, increasing the circulation, and relaxing the muscle. Laughter therapy can make a person calm and comfortable (Han et al., 2017; Samodara et al., 2015).

Laughter therapy has been shown to increase happiness and reduce pain and anxiety among patients with postmastectomy (You & Choi, 2012). It is also proven to reduce depression and sleep among patient's long-term care at hospitals (Han et al., 2017), as well as to reduce blood pressure of patients with hypertension (Nurhusna et al., 2018). However, few studies that



have been found in the elderly with chronic diseases such as hypertension, diabetes mellitus, and rheumatoid, especially at nursing homes although depression is frequently occurred in these patients (Babatsikou et al., 2017). Therefore, this study aimed to determine the effect of laughter therapy on depression in the elderly people at Binjai Integrated Social Service Unit for the Elderly, North Sumatra, Indonesia.

## METHODS

### Study Design

This was a quasi-experimental study with pretest posttest with control group design. The purpose of this study will determine the effect of laughter therapy on depression in elderly people.

### Participants

Participants were selected using a purposive sampling in Binjai Senior Integrated Social Service Unit, North Sumatra. The inclusion criteria of the sample were 1) elderly with depression, age between 60 to 79 years, capable to read and speak Bahasa Indonesia, and willing to participate in this study. A power analysis calculation for independent t-test, with the following parameters setting - the power of (1-  $\beta$  error probability) 0.80, a significant level  $\alpha$  value of 0.05, and effective size of (Cohen  $d$ ) 0.80, yielded the sample size of 21 (Munro, 2001) for each group. Therefore, the total sample size was 42 participants, which were randomly assigned in each group. Participants with even numbers were put into a control group, while those with odd numbers went into an experimental group. There were 21 participants in each group.

### Instrument

Geriatric Depression Scale-15 (GDS-15) Indonesian version (Soejono et al., 2009) was used to measure depression of elderly people. The GDS-15 Short Form was adopted from Kurnianto et al. (2011). The GDS -15 Short Form has a level of accuracy 84% of sensitivity and 95% of specificity. The GDS-15 Short Form includes 15 items, which the scores range from 0 to 15, and were classified into three group level of depression: minor (<5), mild (5-9), and severe (10 – 15). A higher score indicates a higher level of depression.

### Intervention

Laughter therapy developed by Kataria (2010) was adopted in this study, which consisted of heating stage, core stage, and closing stage. There are 17 resistance, namely step 1,2,3: warming-up, step 4: excited laughter, step 5: laughter greetings, step 6: laughing award, step 7: one meter laughter, step 8:

milkshake laughter, step 9: silent laughter, step 10: humming laughter with closed lips, step 11: swing laughter, step 12: lion laughter, step 13: mobile laughter, step 14: rebuttal laughter, step 15: forgive laughter, step 16: gradual laughter, and step 17: heart-to-heart laughter. This therapy was performed 3 times a week for 4 weeks. The intervention was done by the researchers.

The control group received usual care, including a physical examination / vital sign, measurement, advice on medication and best way to follow treatment regimen related to their medical condition. The intervention in the control group was done by medical doctors and nurses.

### Ethical Consideration

This study was ethically approved by Sari Mutiara Indonesia University. The study permission was also obtained from the Social Department of Medan city and Binjai Senior Integrated Social Service Unit. Prior to data collection, the researchers met in-charge nurses at nursing home, and explained about the objectives, benefits, and procedures of the study. The researchers also explained to participants that the participations in this study was voluntarily. An informed consent was signed if the participants agreed to join the study.

### Data Collection

Data were collected from April to June 2018 at Binjai Senior Integrated Social Service Unit, North Sumatra. Data related to depression were collected by the researchers.

### Data Analysis

The normality of the data was tested by using Shapiro Wilk, and it is found that the data was normally distributed. Independent t-test was used to compare the effect of laughter therapy on depression between the groups, and dependent t-test was used to compare the effect within-group.

## RESULTS

Table 1 shows that the average of age of the participants was 64.45 years (SD= 5.29) in the experimental group and 64.46 years (SD= 4.42) in the control group. The majority of the participants in both groups were female, and classified as a widow. Most of participants were Muslim (90.4%). Majority of participants held elementary school as their educational background. There was no significant difference in demographic characteristics in elderly between two groups.

**Table 1** Statistics and percentages of participants' demographic characteristics in both experiment and control groups (N=42)

Participants' characteristics	Experimental group (n=21)		Control group (n= 21)		Statistics	P-value
	N	%	N	%		
Gender						
Male	13	61.9	11	52.4	.177 <sup>b</sup>	.674
Female	8	38.1	10	47.6		
Age (years)	Mean $\pm$ SD (64.45 $\pm$ 5.29)		Mean $\pm$ SD (64.46 $\pm$ 4.42)		-.012 <sup>a</sup>	.998
Marital status						
Widow	17	80.9	19	90.4	1.856 <sup>b</sup>	.173
Married	4	19.1	2	9.6		

**Table 1** Statistics and percentages of participants' demographic characteristics in both experiment and control groups ( $N=42$ ) (Cont.)

Participants' characteristics	Experimental group ( $n=21$ )		Control group ( $n=21$ )		Statistics	P-value
	N	%	N	%		
Religion						
Islam	19	90.4	20	95.2	.191 <sup>b</sup>	.662
Christian	2	9.6	1	4.8		
Educational level						
Elementary school	12	57.1	13	62.0	2.941 <sup>b</sup>	.401
Junior high school	2	9.6	6	28.5		
Senior high school	7	33.3	2	9.5		

Note: a= independent t-test, b = chi square test value, M = Mean, SD = Standard Deviation

**Table 2** Depression level between experiment and control group ( $N=42$ )

Group	Pretest		Posttest		t	P-value (Dependent -t-test)
	M	SD	M	SD		
Experimental group	8.89	1.251	6.48	1.447	-4.146	.000
Control group	8.67	1.281	8.92	1.180	-.240	.648
P-value (Independent t-test)	.812		.000			

Table 2 shows that only those who received laughter therapy in the experimental group had a significant effect on depression ( $p < .05$ ), not for those in the control group ( $p > .05$ ). It was also a significant difference of mean score of depression of participants between the experimental group and the control group after given intervention ( $t = -4.146, p < .05$ ), with mean scores of depression of the experimental group and the control group were 6.48 ( $SD=1.477$ ) and 8.92 ( $SD = 1.180$ ), respectively. This result has shown that depression level in participants in the experimental group after receiving laughter therapy was lower than those who did not receive it.

## DISCUSSIONS

This study examined the effect of laughter therapy on depression in elderly at Binjai Senior Integrated Social Service Unit, and the result showed that depression of elderly decreased after receiving laughter therapy 3 times a week for 4 weeks. In this study, laughter makes the participant feel good, and this positive feeling remains with them even after the laughter subsides. Humor helps them keep a positive, optimistic outlook through difficult situations, disappointments, and loss. More than just a respite from sadness and pain, laughter gives them the courage and strength to find new sources of meaning and hope. Even in the most difficult of times, a laugh or even simply a smile can go a long way toward making them feel better. And laughter is contagious by just hearing laughter primes their brain and readies them to smile and join in the fun. Therefore, laughter therapy reduces depression in elderly.

This study was similar with previous studies, which found that laughing could increase the ability to control a negative situation like stress and depression (Cha & Hong, 2015; Han et al., 2017; Ko & Youn, 2011; Ulahannan & Xavier, 2017). It also involves facial muscles and organs in the body, such as the heart, lungs, and involves the chest, diaphragm, and stomach, which the movement will provide a stimulus to the brain to suppress

epinephrine and cortisol secretion and encourage the release of the hormone endorphin which causes feelings of calm, pleasure, happy and comfortable (Astuti, 2011; Kataria, 2010; Lee et al., 2013; Nurwela et al., 2017). Previous studies also found that feeling happy caused by laughter therapy can be a perception of pleasant sensation experiences (Lee et al., 2013; Ulahannan & Xavier, 2017), and make a person calm and comfortable (Han et al., 2017).

In addition, laughing together can strengthen relationships (Robinson et al., 2019). Shared laughter is one of the most effective tools for keeping relationships fresh and exciting (Robinson et al., 2019). All emotional sharing builds strong and lasting relationship bonds, but sharing laughter also adds joy, vitality, and resilience (Gilliam, 2019). And humor is a powerful and effective way to heal resentments, disagreements, and hurts. Laughter unites people during difficult times (Ulahannan & Xaviour, 2017). Humor and playful communication strengthen our relationships by triggering positive feelings and fostering emotional connection (Robinson et al., 2019). When people laugh with one another, a positive bond is created. This bond acts as a strong buffer against stress, disagreements, and disappointment (Nurwela et al., 2017). Humor and laughter in relationships allow people to be more spontaneous. Humor gets people out of their head and away from their troubles. Laughter helps people forget resentments, judgments, criticisms, and doubts (Robinson et al., 2019).

### Limitation of the study

First, the intervention in this study was provided over four-week period by giving laughter therapy on a one-to-one basis as well as on a group basis, therefore, generalization of the results would be limited. Second, the decrease of depression levels after laughter therapy was 2.41 score. Possible factors would be caused by: 1) the grade of chronic disease, 2) difference in an individual's economic status, 3) knowledge, and 4) family support. However, assessment of the grade of the disease and an individual's economic status was not performed in this study.



## CONCLUSION

Laughter therapy can be used as one of interventions to reduce depression in elderly. It is a simple intervention that all people can do easily anywhere. It is therefore suggested that laughter therapy can be a part of nursing intervention in reducing depression. Nurse educators should incorporate laughter therapy in the theoretical and practical learning of student nurses to extend their knowledge and skills in depression management.

## Declaration of Conflicting Interest

We declare that there are no conflicts of interest associated with this publication.

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## Authors Contribution

RS is the chairman of the research, contributed in analyzing data, and writing the research project. RG is the co-chairman of the research contributed in collecting data.

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**ORIGINAL RESEARCH:  
RESEARCH METHODOLOGY PAPER**

## PSYCHOMETRIC EVALUATION OF FILIPINO VERSION OF PATIENT SATISFACTION INSTRUMENT

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**Abstract**

**Background:** Patient satisfaction has been revealed to affect patient outcomes and has been used as an indicator for measuring quality in health care. However, there are no culturally appropriate instruments that measure Filipino patient satisfaction receiving nursing care.

**Objective:** The objective of the study is to examine the validity and reliability of the Filipino version of Patient Satisfaction Instrument (F-PSI).

**Methods:** The study utilized a cross-sectional study and included 131 Filipino patients in selected hospitals in Manila and were selected through convenience sampling. The tool undergone cross cultural adaptation following the WHO guidelines. Also, content validity following Davis technique and construct validity through confirmatory factor analysis was done to assessed its validity. To measure its internal consistency reliability, Cronbach's  $\alpha$  was conducted.

**Results:** The construct validity of the Filipino version of PSI showed a good model fit while the item content validity index (I-CVI) ranges from 0.83-1.0 and a scale content validity index (S-CVI) of 0.96. Also, the translated tool showed an acceptable internal consistency reliability.

**Conclusion:** The Filipino PSI is a valid and reliable instrument for measuring satisfaction among Filipino patients. Supplementary studies are needed to ascertain its validity and reliability for clinical use.

**KEYWORDS**

patient satisfaction; reliability; validity

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## INTRODUCTION

Long before nurses started to care about the patients, there is the quality aspect that is needed to achieve in order to gain the desirable outcome and patient satisfaction. These could be expected from physicians, nurses and other healthcare professionals. Patients have been observing their healthcare provider when it comes to their application of clinical care, intellectual ability, and humanistic approaches. Also, patients were judging their experiences in the hospital and whether it improves their physical and mental state of being.

Equipped with a better understanding on patients' weakness can make nurses understand better ways to alleviate this discomfort and thus should raise patient satisfaction scores ([Cemalcilar, Canbeyli, & Sunar, 2003](#)). [Azizi-Fini, Mousavi, Mazroui-Sabdani, and Adib-Hajbaghery \(2012\)](#) stated that patient satisfaction can be attributed to healthcare professionals that have good communication and progressive mutual connections with

their patients. According to [Hinshaw and Atwood \(1982\)](#) patient satisfaction is the patient's opinion of the care received from nurses working in the hospitals. It is also one of the ultimate validators of effectiveness and quality of care ([Donabedian, 1992](#)). According to [Abdullah, Kousar, Azhar, Waqas, and Gilani \(2017\)](#), the quality of care that nurses delivered can provide a large positive impact on their patients' health and could also provide higher rates of satisfaction in their end. Thus, nurses and all other allied health professionals, have a substantial role in advancing patient satisfaction through research, as a way to validate the influence of nursing care and its impact on satisfaction with the aptitude and hospital care.

According to [Quintana et al. \(2006\)](#), the most common assessment tool for conducting patient satisfaction studies were the used of standardized questionnaires. Hence, reliability and validity of patient satisfaction measurement tools must be

ensured to realize the main goal of collecting patient's feedback (Urden, 2002). However, although several patient satisfaction instruments have been developed through the years, there has been a few literatures that discussed patient satisfaction research in developing countries (Uzun, 2001). Thus, the purpose of the study was to determine the psychometric properties of the Filipino version of Patient Satisfaction Instrument (F-PSI).

## METHODS

### Study Design and Participants

This cross-sectional study was conducted among 131 Filipino patients admitted in medical-surgical wards in selected Level 3 public and private hospitals in Manila. The number of samples was based on the recommendation by Comrey and Lee (1992) with a minimum of 5 observations per variable when conducting a factor analysis. Data were collected between December 2017 to February 2018. Convenience sampling was utilized in selecting the participants following the set inclusion criteria (aged 18 years and above, conscious and coherent, admitted in the hospital for at least 3 days since they have been admitted long enough to assess for patient satisfaction and willing to participate in the study).

### Instruments

**Patient Satisfaction Instrument (PSI- Filipino version).** This survey scale was developed by Hinshaw and Atwood (1982) which has 25 items, classified in three (3) areas, namely: patient education (E), technical-professional care (P), and trust (T). Technical-professional care domain has seven items (Items 12, 13, 15, 16, 18, 20, 25) that assess the competence of nurses to execute technical activities; the trust domain has eleven items (Items 1, 3, 4, 5, 6, 9, 10, 14, 19, 22, 23) that assess nursing characteristics that allow a positive and calm interaction with the patient and their interaction; and patient education domains has seven items (Items 2, 7, 8, 11, 17, 21, 24) that assess the capacity of nurses to provide health educations to patients including technique demonstration that are relevant in their care.

### Translation and Cross-Cultural Validation of Instrument

Prior to translation and cultural adaptation of the instrument, permission was first asked from the original developer of the tool to be utilized in the study. Following the guidelines of World Health Organization (n.d.) on translation and cross-cultural validation, the original tool was forward translated from English to Filipino by an independent bilingual translator who is a health professional. Then, an expert panel consisting of experts was formed that includes the original translator of the tool, a nursing lecturer with PhD in Nursing, a registered psychometrician and a nurse supervisor with 10 years of hospital experience. The goal of the expert panel was to determine vague concept or expressions of the translated tool and to assess the content validity of the items in the tool.

Afterwards, the translated tool was back translated to English by an English language teacher who has no knowledge of the instrument. Then, pretesting and cognitive interview was done to ensure that no problems will be encountered related to the length and intent of the items during the actual use of the tool. A total of ten participants who met the inclusion criteria set in the study

were included. The participants stated that the meaning of the translated tool was clear and can be understood well. Further, no problems were encountered related to the length and intent of the questions.

### Data Analysis

In order to ensure the internal consistency reliability of the translated tool, Cronbach's  $\alpha$ , inter-item and total-item correlation were computed. Alpha coefficient of more than 0.70 for Cronbach's  $\alpha$  was considered acceptable (Ferketich, 1991; D. Polit & Beck, 2014). For the content validity, an Item Level CVI (I-CVI) of 0.78 and a Scale Level CVI (S-CVI) of 0.80 is considered content valid (Davis, 1992). For the construct validity, a confirmatory factor analysis using maximum likelihood estimation with the following values were considered as a good model fit: relative chi-square ( $\chi^2/df$ ) at  $\leq 3$ , root mean square error approximation (RMSEA) at  $\leq 0.08$ , comparative fit index (CFI) at  $\geq 0.90$ , Tucker-Lewis index at  $\geq 0.90$ , incremental fit index (IFI) at  $\geq 0.90$  and standardized root mean square means  $\leq 0.08$  (Kline, 2015). Data gathered was analyzed using SPSS 21.0 and AMOS 20.0 (IBM Corp. Armonk, NY, USA)

### Ethical Consideration

The objectives of the study were fully explained to the participants and informed consent forms were given. The Institutional Ethics and Review Committee of Centro Escolar University approved the conduct of the study.

## RESULTS

### Demographic Characteristics

There were a total of 131 Filipino patients included in the study with a mean age of 33.3 years (SD=14.30 years), 60 of them were females and 71 were males. The average hospital stay of the participants was 7.72 days (SD=9.28 days).

### Content Validity

According to Lynn (1986) in order to establish the content validity of an item a panel consisting of six experts should be formed. Thus, an expert panel consisting of one nursing lecturer with PhD in nursing, four nursing lecturers with MA degree in Nursing, and one nurse supervisor with 8 years of working experience was formed. The expert panel evaluated the translated tool using a 4-point Likert scale with one being irrelevant and four as highly relevant. The content validity index (CVI) was then calculated by determining the measure of items rated as three or four by the experts. I-CVI refers to the proportion of content experts giving item a relevance rating of 3 or 4 while S-CVI is the proportion of items given a rating of quite/very relevant by raters involved (Waltz, Strickland, & Lenz, 2005). Based on the evaluation of the experts, the translated tool obtained an I-CVI ranging from 0.81 to 1.0 and an S-CVI of 0.96.

### Construct Validity

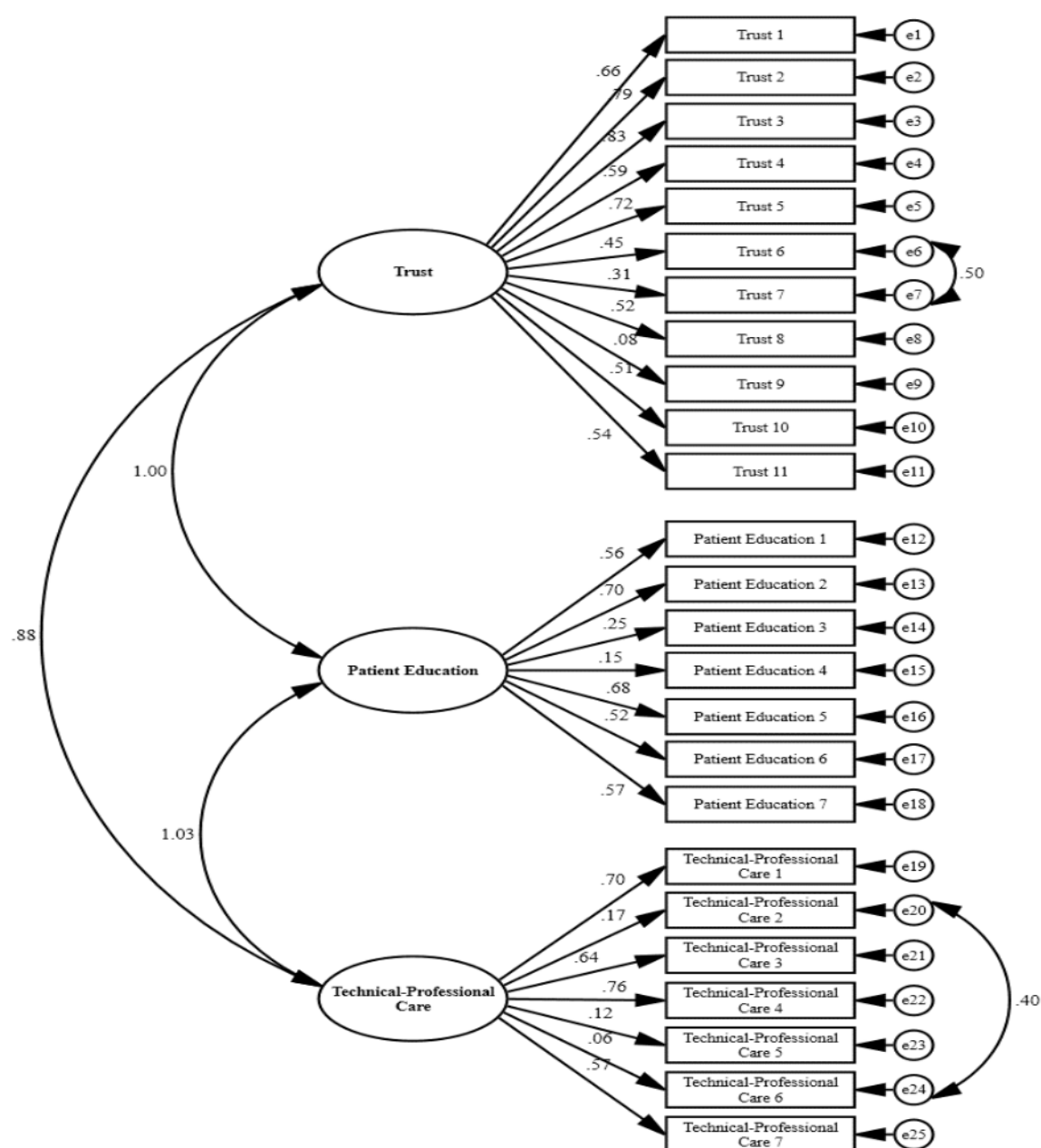
The study followed the original three-factor model proposed by (Hinshaw & Atwood, 1982). The model output is shown in standardized estimates in Figure 1. The 25 items were loaded on the three latent variables and the CFA revealed a chi-square goodness (CMIN/df)=2.74, root mean square error of approximation (RMSEA)=0.079, comparative fit index



(CFI)=0.092, Tucker-Lewis index (TLI)=0.91, incremental fit index (IFI)=0.92 and standard root mean square residual (RMSR)=0.073. It was found that the results were acceptable and in good agreement (Table 1).

**Table 1** Model Fit Parameters for the Emerging Models ( $N = 131$ )

Model	CMIN/df	RMSEA	CFI	TLI	IFI	SRMR
Acceptable Values	$\leq 3.00$	$\leq 0.08$	$\geq 0.90$	$\geq 0.90$	$\geq 0.90$	$\leq 0.08$
Index Values	2.74	0.079	0.92	0.91	0.92	0.045



**Figure 1** Confirmatory Factor Analysis of F-PSI

### Reliability Analysis

The translated tool was then administered to Filipino patients admitted in medical-surgical ward and was tested for reliability analysis. Table 2 showed the Cronbach's alpha coefficient for

the items and total score of the questionnaire. The results showed a Cronbach's  $\alpha$  coefficient was 0.856, while the alpha coefficient for trust, technical-professional care and patient education were 0.798, 0.738, 0.809 respectively.

**Table 2** Cronbach's Alpha Reliability Properties of CNPI-Patient Filipino Version

Item	Mean (SD)	Cronbach's $\alpha$ if item deleted
1. The nurse should be more attentive than...	4.32 (0.87)	0.878
2. Too often the nurse thinks I can't understand...	4.21 (0.94)	0.878
3. The nurse is pleasant to be around	4.21 (0.96)	0.876
4. I always feels free to ask the nurse questions	4.26 (0.90)	0.877
5. The nurse should be more friendly than he...	4.18 (1.03)	0.879
6. The nurse is a person who can understand...	4.10 (0.99)	0.878
7. The nurse explains things in simple language	4.22 (0.96)	0.878
8. The nurse asks a lot of questions, but once...	3.70 (1.16)	0.884
9. When I need to talk to someone, I can go to...	3.88 (1.18)	0.881
10. The nurse is too busy at the desk to spend...	3.61 (1.15)	0.881
11. I wish the nurse would tell me about the....	3.63 (1.24)	0.883
12. The nurse makes it a point to show me how...	3.93 (1.15)	0.875
13. The nurse is often too disorganized to.....	3.72 (1.34)	0.887
14. The nurse is understanding in listening to....	3.80 (1.03)	0.881
15. The nurse gives good advice	3.81 (1.05)	0.880
16. The nurse really knows what he/she is.....	4.01 (0.96)	0.878
17. It is always easy to understand what the...	3.94 (0.93)	0.878
18. The nurse is too slow to do things for me	3.47 (1.46)	0.888
19. The nurse is just not patient enough	3.01 (1.55)	0.888
20. The nurse is not precise in doing his/her work	3.55 (1.48)	0.888
21. The nurse gives directions at just the right...	3.71 (1.08)	0.878
22. I'm tired of the nurse talking down to me	3.98 (0.97)	0.879
23. Just talking to the nurse makes me feel better	3.80 (1.06)	0.880
24. The nurse always gives complete enough...	4.1 (1.03)	0.879
25. The nurse is skillful in assisting the doctor....	4.03 (1.14)	0.879

Note: Overall Cronbach's  $\alpha$  for 25 items=0.856

**Table 3** Reliability Analysis of the Domains of Filipino Version of Patient Satisfaction Instrument

Domains	Item	Cronbach's $\alpha$
Trust	11	0.798
Technical Professional Care	7	0.738
Patient Education	7	0.809
Overall Summary Score	25	0.856

## DISCUSSION

This study evaluated the validity and reliability of the Filipino version of the Patient Satisfaction Instrument. The guidelines set by the World Health Organization were followed to culturally adapt and translate the original tool. Backward and forward translation were done to ensure that semantic equivalence was met. According to [Erkut, Alarcón, Coll, Tropp, and García \(1999\)](#), the back-translation method has been considered the preferred method of obtaining a culturally equivalent questionnaire when translating an existing instrument.

In assessing the psychometric properties of the translated tool, the content validity, construct validity and internal consistency reliability were evaluated. For the content validity, a panel of six experts was formed following the recommendation of [Lynn \(1986\)](#). Then, the content validity index was computed. According to [D. F. Polit and Beck \(2006\)](#), I-CVI refers to the proportion of content experts giving item a relevance rating of 3 or 4 while S-CVI is the proportion of items given a rating of

quite/very relevant by raters involved ([Waltz et al., 2005](#)). The translated have an I-CVI ranging from 0.81 to 1.0 and an S-CVI of 0.96 which was considered content valid ([Davis, 1992](#)).

In assessing the construct validity, a Confirmatory Factor Analysis (CFA) was conducted performed following the original three-factor model of PSI developed by [Hinshaw and Atwood \(1982\)](#) and used the same model specification in this analysis. The CFA revealed a  $\chi^2/df=2.74$ , root mean square error of approximation=0.079, comparative fit index=0.092, Tucker-Lewis index=0.91, incremental fit index=0.92 and standard root mean square residual=0.045 and was shown to have a good fit model. Thus, the F-PSI confirmed the loading factors on the PSI which consists of trust, technical-professional care, and patient education.

According to [Brown \(2002\)](#), the most widely used tool for assessing internal consistency reliability is Cronbach's alpha. The PSI which is used to measure patient satisfaction in acute care setting was assessed for internal consistency in different

health care settings worldwide. [De Oliveira and Guirardello Ede \(2006\)](#) evaluated the Brazilian version of PSI which showed an over-all value of 0.936 while the subscales showed an alpha of 0.777 for trust, 0.879 for technical professional care and 0.811 for patient education. On the other hand, the PSI Persian version showed an internal consistency of 0.94 ([Rafii, Hajinezhad, & Haghani, 2008](#)). The study of [Wolf, Miller, and Devine \(2003\)](#) assessed the alpha coefficient of PSI among 73 cardiac patients undergoing interventional cardiology studies and showed a value of 0.89 while an American study among 86 patients in the emergency department (ED) showed an alpha coefficient of 0.94 ([Bucco, 2015](#)). In the study, Cronbach's alpha coefficient of 0.798, 0.738 and 0.809 for the trust, technical-professional care, and patient education was computed while the over-all scale showed a value of 0.856. Reliability estimates from this study suggest that the Filipino version of PSI is internally consistent based on the acceptable value which is higher than 0.70 ([D. Polit & Beck, 2014](#)).

The limitation of the study is that most of the participants were patients from medical and surgical wards, which suggests that further evaluation of the translated instrument with more diverse participants is warranted. Also, the participants were recruited through convenience sampling which limits the generalizability of the findings.

## CONCLUSION

The Filipino PSI is a valid and reliable instrument for measuring patient satisfaction among Filipino patients admitted in medical-surgical ward. However, further studies are needed to ascertain its validity and reliability for clinical use.

## Declaration of Conflicting Interest

The authors have no conflict of interest to disclosed.

## Acknowledgment

The authors would like to express gratitude to all individuals who participated in the study.

## Author Contribution

G. P. S: Performed analysis, interpretation of data, wrote manuscript and acted as corresponding author. K.A.C.C: Assisted in writing the manuscript and analysis and interpretation of data, conducted the data collection, secured permission from the tool developers and ethical clearance.

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## LETTER TO EDITORS

# OPTIMIZING NURSING DOCUMENTATION AS AN EFFECTIVE METHOD TO EXPRESS NURSING

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### KEYWORDS

nursing; documentation; income; government; Indonesia

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Dear Editors,

When I was working on students' task evaluation while enjoying a cup of "*Kurukahveci*" (Turkish coffee), an interesting article presented by [Gunawan \(2019\)](#) appeared on my Facebook page, blatantly exposing a phenomenon that becomes a least frequent topic within nursing profession, namely *a low level of payment*.

This article, indeed, courageously investigates the experience of several nurses with an interesting quote, "*I have spent lot during my learning time, yet, my salary is not even enough to payback my debt during my study*". This however has been commonly expressed among nurses ([Gunawan, 2019](#)).

As a nursing educator who is working in a private institution and has been involved directly in a marketing program, the description above often makes us, private sector workers, tighten our belt. As the biggest part of our income comes from the students, the above phenomenon makes parents may think twice to send their children to nursing school. "*How could you survive if your annual payment doesn't meet your needs?*", I believe that thought rise up in the minds of most parents.

In response to the issue above, however, I would like to cite a statement from the Principle of Nursing Documentation, published by [American Nursing Association \(2010\)](#), "*Documentation of nurses' work is critical as well for effective communication with each other disciplines*". I am underlining the *effective communication* since it explicitly tells us that creating

decent records of our services is important to evolve a mutual interaction between nurses and other health professionals. The statement also illustrates that nursing documentation plays an important role in the community, particularly about *who nurses are and what nurses do*. By informing the community with an *easy-to-understand* method of nursing process, we actively communicate our core knowledge ([American Nursing Association, 2010](#)).

Through nursing documentation process, and by strongly hold the principle of *comme il faut* (as it should be), the visibility of nursing activities will be definitely increased, and directly impact to nurse payment. Nursing works visibility through nursing documentation is however an important factor for payors (public or private health providers), government, accreditation bodies, researchers, and other individuals or groups. It also renders a basic for demonstrating and understanding nursing's contribution both to patient care outcomes and to the viability and effectiveness of those who provide and support quality-based patient care ([American Nursing Association, 2010](#)).

So, what should we do to increase the visibility of the nurse's work? We essentially need to start ensuring that the standardized documentation is taught appropriately in nursing schools. Should we create our own Standard Nursing Language (SNL) in Indonesia? or should we generalize nursing language in nursing documentation in the anticipation of globalization effect? These are the other question marks to consider, and it has been influenced by many factors.

After we guarantee that every nurse has professionally produced a high-quality nursing documentation, another homework is to conduct multi-directional socialization. First is about how other health professionals working with nurse can also witness the visibility of the nurses' works. As a teamwork, some jobs should be done independently, and some need collaboration. Nonetheless, the main focus is patients. Second is related to the community as the main users. They must also understand that nurses are a profession with specific competencies that require a specific education with higher costs. Third is about how we convene together with the big users, the health facilities, and the government. There should be a legal agreement in regards to what nursing processes or activities need to be paid.

I completely understand that these issues are big challenges among nurses in Indonesia, and we need to do great efforts to increase the visibility of nursing activities, and one of which is to start optimizing nursing documentation. It is noteworthy that although nurses are less likely to be appreciated among the payors, however, nurses still become the most important profession in both clinical and community setting. Similar with a

Turkish coffee I am used to drinking. It may seem dark, but we still need it anyway.

#### **Declaration of Conflicting Interest**

None to declare.

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I personally thank Mr. Joko Gunawan for opening up the discussion.

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