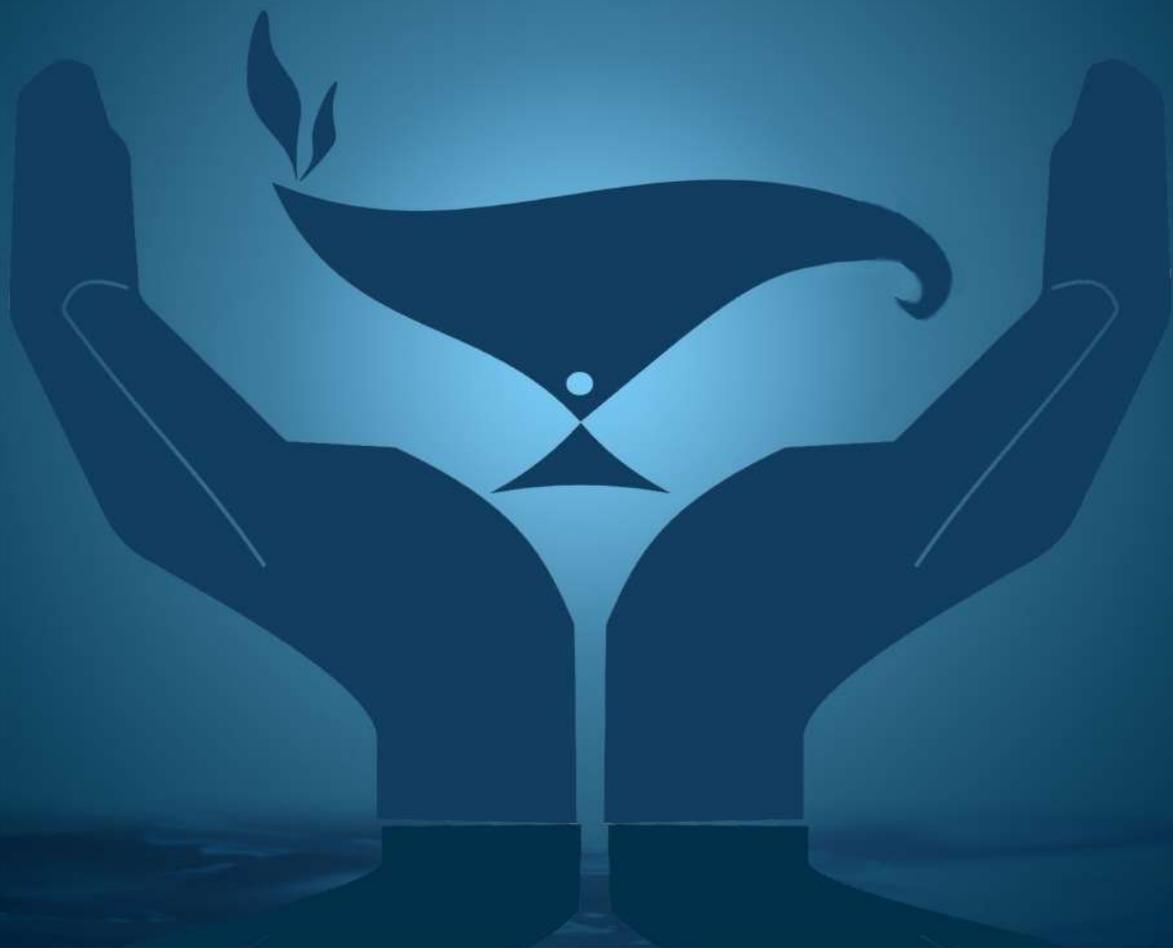


p-ISSN: 2338-5324

e-ISSN: 2442-7276

# JKP

JURNAL KEPERAWATAN PADJADJARAN



OPEN  ACCESS

Jurnal Keperawatan Padjadjaran

# JKP

Published by Faculty of Nursing Universitas Padjadjaran Collaboration with Association of Indonesian Nurse Education Center (AINEC)

## Editorial Board

### Advisor

Dean Faculty of Nursing  
Henny Suzana Mediani, MNg., Ph.D

### Chief Editor

Dr. Siti Yuyun Rahayu Fitri, M.Si

### Editorial Members

Ferry Efendi, S.Kep.Ns., M.Sc., PhD  
Lely Lusmilasari, S.Kp., M.Kes., Ph.D  
Prof. Dr. Ajeng Diantini, M. Si., Apt  
Dr. J.C.M de Bekker  
Prof. Dr. Che An Binti Ahmad  
Prof. Dr. Budi Setiabudiawan, dr., Sp. A(K), M. Kes  
Prof. Alison Hutton  
Dr. dr. Viera Wardhani, M.Kes., FISQua  
Kusman Ibrahim, S.Kp., MNS., PhD  
Laili Rahayuwati, Dr. PH  
Prof. Suryani, S.Kp., MHSc., Ph. D  
Ikeu Nurhidayah, M. Kep., Sp An

### Technical Editor

Sri Hendrawati, M. Kep

### Administration

Novita Kamaruddin, SE  
Winingsih Lestari, SAP, MM  
Endah Rahayu, S. Kep. Ners

Accredited by DIKTI, SK Ministries of Research, Technology and Education  
Nomor: 148/M/KPT/2020

### Address

Faculty of Nursing , Building Academic 2 Floor 1  
Jl Raya Jatinangor - Sumedang Km. 21  
Jatinangor  
Mobile: 085317736810; Phone: 022-7796647; Fax: 022-7796647  
Website: [www.jkp.fkep.unpad.ac.id](http://www.jkp.fkep.unpad.ac.id)

Jurnal Keperawatan Padjadjaran

# JKP

## Research Article

Volume 8 Issue 3

Correlation Between Spiritual Intelligence and Self-efficacy Patients with Coronary Artery Disease <b>Wantiyah Wantiyah, Wiwit Ulansari, Fitrio Deviantony</b>	191
The Effect of Reciting the Holy Qur'an to the Speaking Ability and Spirituality Level of Stroke Patient with Motor Aphasia <b>Slamet Purnomo, Ikhlas Muhammad Jenie</b>	200
Symptom Burden's Associated Factors among Hemodialysis Patients <b>Early Octavia Limbong, Tuti Pahria, Sri Hartati Pratiwi</b>	208
Effectiveness Blended Learning in Reducing HIV-related Stigma and Discrimination among Nurses: A Queasy Experimental Design <b>Heni Purnama, Nyayu Nina Putri Calisanie, Linlin Lindayani, Taryudi Taryudi</b>	221
Depression, Recurrence, and Perceptions of Physical Fitness among CHD Patients: A Comparison based on Participation in Phase II Cardiac Rehabilitation Program <b>Aan Nuraeni, Atlastieka Praptiwi, Ikeu Nurhidayah</b>	231
Increasing Prevention Knowledge of Sexual Violence and Emotional Maturity on Children through the Mini-Movie Media <b>Iqlima Dwi Kurnia, Ilya Krisnana, Farida Norma Yulianti</b>	243
The Nurses' Experience during the Caring of Coronavirus (COVID-19) Patients: A Descriptive Qualitative Study <b>Indah Sri Wahyuningsih, Fitria Endah Janitra, Rebriarina Hapsari, Sarinti Sarinti, Muhammad Mahfud, Failasuf Wibisono</b>	253
Child Health Problems in Agricultural Setting <b>Lantin Sulistyorini, Peni Perdani J, Ira Rahmawati, Eka Afdi S</b>	262
The Correlation of Socio Demographic and Knowledge Factors Toward Therapy Options among Breast Cancer Patients <b>Laili Rahayuwati, Kusman Ibrahim, Ikeu Nurhidayah, Sri Hendrawati</b>	271
The Correlation between Feeding Habit Factor and The Incidence of Stunting in Children Under Five Years <b>Elni Elni, Erna Julianti</b>	283

## Guidelines for Authors

Jurnal Keperawatan Padjadjaran (JKP) are a journal of scientific publications published every four months (quarterly) using a peer review system for article selection. Jurnal Keperawatan Padjadjaran intended for practitioners, academics, professionals, students or among the general public who are involved and interested in the development of Health and Nursing Science. It can receive relevant articles in the field of health and nursing, which includes research articles.

### General Instructions

The articles received are original works, have not been and / or are in the process of being published in other journals, all articles have been approved by the ethics committee and articles involving human subjects have obtained informed consent and written following the American Psychological Association (APA) ) Edition 6 of 2009. The author should ensure that all co- authors have agreed. All articles will be discussed and reviewed by experts and editorial boards. Articles that need improvement or revision will be returned to the author.

### Writing Article

Articles are written using Times New Roman font, size 12 with space 1.5. Distance of left edge 4 cm, right edge 3 cm, edge above 3 cm and bottom edge 3 cm. Article lengths of at least 12 pages and maximum 20 pages. Article submitted in the form of layout 1 (one) column. The article contains two references from JKP with Google scholar. Each page is numbered in sequence from the title page to the last page.

### Structure Writing

The structure of writing in JKP is as follows: Abstract, Introduction, Methods, Results of Research, Discussion, Conclusions, and Bibliography. The following describes the guidelines for each writing structure:

#### Abstract

Abstract for each article written in English. The author's name (without academic title), affiliate author (department and institution name), email address, and institutional address include in the abstract. The abstract form is written in a concise and clear description of the background, methods, results, conclusions, and suggestions (implications) of the research. The abstract is accompanied by a keyword (key words) consisting of 3-5 keywords and the order is arranged alphabetically.

#### Introduction

The introduction should clearly describe the background of the study. This also defines the novelty of the research. The manuscript is written with Times New Roman font size 12, 1.5 spaced, left and right justified, paper in one column and on A4 paper. Distance of left edge 4 cm, right edge 3 cm, edge above 3 cm and bottom edge 3 cm. Article lengths of at least 12 pages and maximum 20 pages. The article contains

two references from Jurnal Keperawatan Padjadjaran with google scholar. Each page is number in sequence from the title page to the last page.

#### Method

This section presents the research design, population, sample and sampling technique, and the analysis method. The author should explain how the study was done in detail. All articles have been approved by the ethics committee and articles involving human subjects have obtained informed consent. Ethics, validity and reliability, or trustworthiness should be part of this section.

#### Results

The study findings should be clear and concise. If the findings present in table or diagram, there must not be any overlap between findings shown in table/diagram and description that written in text. The tables are arranged in a row, each table should be briefly titled and placed on top of the table, the title of the table is written in capital letters at the beginning of the word, except for the foreground. The maximum number of tables in each article is 6 tables. Photos, pictures, and diagrams are arranged in sequence, and given a short title and placed on the photo/drawing/diagram with a maximum of 3 pieces.

#### Discussion

This should present the critical thinking and author's analysis of the study results. Interpreting and comparing between study's results and existing knowledge are significant in this section. Reasons for the results and implications to the Nursing knowledge should be discussed.

#### Conclusion

Highlights of the study findings present in this section. Then followed by the main conclusion of the research. Limitations and future research should be mentioned.

#### References

References are written in alphabetical order. Minimum referral number 50% taken from journal. Year published 80% reference minimal from last 10 years. Avoid referral in the form of personal communication (personal communication). The article contains two references from Jurnal Keperawatan Padjadjaran with Google scholar. Article must be submitted in the format described in the American Psychological Association (APA) style (6th ed., 2009). Please refer to this website for a free APA Style tutorial: <http://www.apastyle.org/learn/tutorials/basicstutorial.aspx>. Here's an example of writing a reference:

#### Journal

Journals with direct object identifier (DOI)  
Author, AA, Author, BB, & Author, CC (Year).  
Title of article. Journal title, volume (issue), pp - p. Doi:

xx.xxxxxxxxxx

#### **Journal with DOI with 1 author**

Houlston, R. S. (2008). Pseudoautosomal linkage in chronic lymphocytic leukaemia. *British Journal of Haematology*, 109(4), 899–900. doi: 10.1046/j.1365-2141.2000.109004899.x

#### **Journals with DOI with 2-7 authors (write all authors)**

Herbst-Damm, K. L., & Kulik, J. A. (2005). Volunteer support, marital status, and the survival times of terminally ill patients. *Health Psychology*, 24, 225-229. doi:10.1037/0278-6133.24.2.225

#### **Journal with DOI with 8 or more authors (write the first 6 authors, ... and last author)**

Gilbert, D. G., McClernon, J. F., Rabinovich, N. E., Sugai, C., Plath, L. C., Asgaard, G., ... Botros, N. (2004). Effects of quitting smoking on EEG activation and attention last for more than 31 days and are more severe with stress, dependence, DRD2 A 1 allele, and depressive traits. *Nicotine and Tobacco Research*, 6, 249-267. doi:1 0.1080/1462220041 0001676305

#### **Journals without DOI**

Author, A. A., Author, B. B., & Author, C. C. (Year). Article title. *Journal title*, volume (issue), pp - p.

#### **Journal without DOI with 1 author**

Williams, J. H. (2008). Employee engagement: Improving participation in safety. *Professional Safety*, 53(12), 40 – 45.

#### **Journal without DOI with 2-7 authors (write all authors)**

Keller, T. E., Cusick, G. R., & Courtney, M. E. (2007). Approaching the transition to adulthood: Distinctive profiles of adolescents aging out of the child welfare system. *Social Service Review*, 81, 453-484.

#### **Journal without DOI with 8 or more authors (write the first 6 authors, ... and last author)**

Wolchik, S. A., West, S. G., Sandler, I. N., Tein, J. Y., Coatsworth, D., Lengua, L., ... Griffin, W. A. (2000). An experimental evaluation of theory-based mother and mother-child programs for children of divorce. *Journal of Consulting and Clinical Psychology*, 68, 843 – 856.

#### **Online Journal**

Koo, D. J., Chitwoode, D., D., & Sanchez, J. (2008). Violent victimization and the routine activities/lifestyle of active drug users. *Journal of Drug Issues*, 38, 1105 – 1137. Retrieved from <http://www.criminology.fsu.edu/~jdi>.

#### **Abstract as Primary Source**

Lassen, S. R., Steele, M. M., & Sailor, W. (2006). The relationship of school-wide positive behavior support to academic achievement in an urban middle school. *Psychology in the Schools*, 43, 701-712. Abstract retrieved from <http://www.interscience.wiley.com>

#### **Abstract as Secondary Source**

Hare, L. R., & O'Neill, K. (2000). Effectiveness and efficiency in small academic peer groups. *Small Group Research*, 31, 24-53. Abstract retrieved from Sociological Abstracts database. (Accession No. 200010185).

#### **Magazine**

Mathews, J., Berret, D., & Brillman, D. (2005, May 16). Other winning equation. *Newsweek*, 145(20), 58 – 59.

#### **Online Magazine**

Lodewijkx, H. F. M. (2001, May 23). Individual-group continuity in cooperation and competition under varying communication conditions. *Current Issues in Social Psychology*, 6(12), 166-182. Retrieved from <http://www.uiowa.edu/~grpproc/crisp/crisp.6.12.htm>

#### **Book**

Alexie, S. (1992). *The bussiness of fancy dancing: Stories and poems*. Brooklyn, NY: Hang Loosse Press.

#### **Books Writer An Institution that has E in sidan In published Agency**

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

#### **Anonymous Book Writer**

Dorland's illustrated medical dictionary (31st ed.). (2007). Philadelphia, PA: Saunders.

#### **Chapter in Books**

Booth - La Force, C., & Kerns, K.A. (2009). Child-parent attachment relationships, peer relationships, and peer-group functioning. In K.H. Rubin, W.M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 490-507). New York, NY: Guilford Press.

#### **Book Online**

American Nurses Association. (2010). *Nursing: Scope and standards of practice* (2nd Ed.). Retrieved from <http://www.nursesbooks.org/ebooks/download/NursingScopeStandards.pdf>

#### **Other Online Resources**

Kenney, G. M., Cook, A., & Pelletier, J. (2009). Prospects for reducing uninsured rates among children: How much can premium assistance programs help. Retrieved from Urban Institute website: [//www.urban.org/url.cfm?ID=411823](http://www.urban.org/url.cfm?ID=411823)

#### **Dissertation and Thesis**

Vance, C. A. E. (2011). *Measuring neonatal quality of life (NeoQOL) for critically-ill newborns in neonatal intensive care units* (Doctoral dissertation). University of Washington, Washington.

#### **Proceedings of the Conference**

Bosch, O. J., & Neumann, I. D. (2008). Brain vasopressin is an important regulator of maternal behavior independent of dams' trait anxiety. *Proceedings Of The National Academy Of Sciences Of The United States Of America*, 105(44), 17139-17144.

#### **How to Deliver Articles**

Articles submitted with a statement that the article has never been and / or is not in the process of publication in other journals. Articles submitted by registering online via web: <http://jkp.fkep.unpad.ac.id>

**Secretariat of Jurnal Keperawatan Padjadjaran  
Faculty of Nursing, Universitas Padjadjaran  
Jl. Raya Bandung-Sumedang Km. 21  
Jatinangor-Sumedang, Jawa Barat  
Phone. (022) 7796647/ Fax. (022) 7796647  
Email: [jkp.fkep@unpad.ac.id](mailto:jkp.fkep@unpad.ac.id)**

## Correlation Between Spiritual Intelligence and Self-efficacy Patients with Coronary Artery Disease

**Wantiyah Wantiyah, Wiwit Ulansari, Fitrio Deviantony**  
Faculty of Nursing, Universitas Jember, Jember, Indonesia  
*Corresponding Email: wantiyah.psik@unej.ac.id*

Submitted: 24-07-2020   Accepted: 16-09-2020   Published: 01-12-2020

### Abstract

Coronary Heart Disease (CHD) is a cardiovascular disease affecting the patient's life both psychologically and physically. Therefore it can reduce patients' quality of life. Self-efficacy is one crucial factor that can improve the quality of life of patients with CHD to control risk factors. spiritual intelligence can make a person more able to interpret the life and have a positive meaning in each event, to improve the quality of life. This study used a descriptive correlation research design with a cross-sectional approach. This research involved 138 CHD patients as respondents in RSD dr. Soebandi of Jember, East Java, Indonesia, obtained by accidental sampling method. Data were collected using a Spiritual Intelligence questionnaire and Cardiac Self-Efficacy (CSE). The analysis of data used is Somers'd test with a confidence level of 95% ( $\alpha$ : 0.05). Respondent characteristics include age, gender, marital status, education, occupation, income, smoking history, and disease history. The results showed that 86.2% of CHD patients had high self-efficacy, and 55% of CHD patients had high spiritual intelligence. Analysis shows there is a strong correlation between spiritual intelligence and self-efficacy ( $p = <0.001$ ,  $r = 0.628$ ,  $\alpha$ : 0.05). The patients having high spiritual intelligence will have high self-efficacy. Spiritual intelligence comes from within the patient, which can be developed to improve the self-efficacy of CHD patients through the provision of holistic nursing care. Therefore, it is expected for nursing staff to assess patients' spiritual intelligence, so they can provide appropriate nursing care so that patient self-efficacy can be improved, and patient health can be optimized.

**Keywords:** Coronary artery disease, self-efficacy, spiritual intelligence.

## Introduction

Coronary Heart Disease (CHD) is a disease that occurs when the coronary artery walls are narrowed due to a buildup of plaque that can cause heart attacks (American Heart Association, 2015). World Health Organization noted that 17 million people died in the world due to heart and blood vessel disease. It is around 31% of deaths in the world, most or 8.7 million, are caused by coronary heart disease, and more than 75% of deaths are caused by heart and blood vessel disease (Kementrian Kesehatan Republik Indonesia, 2018).

East Java Province in 2013 became the region with the most coronary heart disease sufferers totaling 375,127 people (Kementrian Kesehatan Republik Indonesia, 2014). CHD is a chronic disease having an impact on the physical and psychological condition of the patient. The physical impact can be in the form of chest pain and disruption of activities, while in terms of the psychological type of anxiety and depression to make patients afraid of death (Hamzah, Dewi, & Suparno, 2014). The physical and psychological impacts can worsen the patient's condition, so it is essential to do good self-management. Good self-management can be done with strong self-efficacy (Pencina et al., 2019; Xu, Kwan, & Leung, 2019).

Self-efficacy has a vital role in helping coronary heart patients encourage patients to control themselves and maintain behaviors that support the improvement of CHD patients' health. Sari, Sari, & Pratiwi research results (2017) showed that the majority of respondents (62.86%) had high self-efficacy and had moderate risk factors for cardiovascular disease. Wantiyah's (2010) research, states that self-efficacy is related to the maintenance of function and prevention of risk factors.

Not only physical aspects but psychological aspects in CHD patients also have an essential role. Positive mental health can affect physical health because good psychological health will positively and happily make a person think positively. Positive mental health includes psychological health aspects, emotions, positivity, life satisfaction, optimism, life goals, social

support, and spirituality (Park et al., 2014). Psychological factors that can affect the quality of life of CHD patients are spiritual intelligence originating from within oneself to support self-efficacy (Nekouei, Yousefy, Neshat Doost, Manshaee, & Sadeghei, 2014).

A study has revealed that individuals with better spiritual inclinations can respond when faced with damage, control stresses better, and have better health (Saam & Wahyuni, 2012). Norouzi & Azar (2017), show that there is a significant positive relationship between spiritual intelligence and emotional expression, especially positive emotional expression ( $p < 0.05$ ). In chronic patients with spiritual intelligence will have an impact on physical and mental stress, lead to adaptation and elimination of stress or reduction of stress and anxiety in patients by forming patient adaptations. This is supported by research by (Dev et al., 2018), which states that there is a relationship between spiritual intelligence and healthy behavior with a significance of  $p = (0.0001)$ .

Even though there are researches find that spiritual intelligence can influence patients' response to their disease. However, researches focus on how spiritual intelligence can influence self-efficacy in a patient with CHD are still limited. Spiritual intelligence, which impacted on the patient's belief about their ability to improve their health, has a good influence on the psychology of CHD patients. It was the goal of health management for CHD patients. Hence, researchers are interested in finding the relationship between spiritual intelligence and self-efficacy in coronary heart disease patients. According to that point, the resulting study of the relationship between spiritual intelligence and self-efficacy is expected to be a consideration in providing nursing care for CHD patients.

## Method

The design used in this study is descriptive correlational with non-experimental design and using a cross-sectional approach. This study has two variables: self-efficacy (dependent variable) and spiritual intelligence (independent variable). This study's population was all coronary heart

disease patients recorded in the Cardiology Polyclinic of hospital dr. Soebandi of Jember. The G \*Power application 3.1.9.4 calculated the number of samples. Based on calculations using G \*Power 3 with a standard effect size of 0.3, an error probability using 0.05, and power (1-β error probability) using 0.95 obtained a sample of 138. The samples were collected using an accidental sampling technique.

This research was conducted at Cardiology Polyclinic of RSD dr. Soebandi, of Jember Regency from September 2019 to January 2020, and research data collection was carried out from January to February 2020. The data were collected using a standardized, validated, and reliable to use questionnaire, namely the spiritual intelligence questionnaire by Kurniawati (2018), in her research entitled “The Effect of Mind-Body-Spiritual (MBS) Nursing Care on Spiritual Intelligenc; Expressions of Hsp 70, eNOS, VCAM-1, and MCP-1 in patients with coronary heart disease” with the reliability test, the Cronbach alpha value was 0.639-927, and the

CSE (Cardiac Self Efficacy) Questionnaire by Wantiyah (2010). The results of the CSE questionnaire reliability test Cronbach alpha value of 0.77.

The questionnaire test results are reliable if the Cronbach alpha value > 0.7 (Pamungkas & Usman, 2017). The data from the spiritual intelligence questionnaire and CSE can be used as a measurement tool. The results of the age normality test conducted by the researcher indicated a p-value of 0.200, which means normal, so that the data are presented in the form of mean and standard deviation. Meanwhile, categorical variables such as gender, education, occupation, history of the disease, marital status, spiritual intelligence, and efficacy are presented in terms of frequency and percentage of each variable. After all the data sought is collected, the data was analyzed using Somer’s correlation test with a significance level (α) of 5% or 0.05.

## Results

**Table 1 Distribution of Respondent Characteristics**

Characteristics	Mean	SD	Total	Percentage (%)
Age (years)	60.39	9.473	-	-
Sex				
Male	-	-	109	79
Female	-	-	29	21
Education Background				
No education	-	-	6	4.3
Elementary School	-	-	43	31.2
Junior High School	-	-	17	12.3
Senior High School	-	-	47	34.1
Higher Education	-	-	25	18.1
Occupation				
Jobless	-	-	20	14.5
Labor	-	-	8	5.8
Farmer	-	-	17	12.3
Businessman	-	-	17	23.9
Housewife	-	-	11	8
Soldier. Police	-	-	2	1.4
Private employees	-	-	10	7.2
Public employees	-	-	35	25.4
Etc.	-	-	2	1.4

**Wantiah:** Correlation between Spiritual Intelligence and Self-efficacy Patients with Coronary Artery Disease

Income				
< Rp.2.000.000,00	-	-	76	55.1
> Rp.2.000.000,00	-	-	62	44.9
Marital status				
Unmarried	-	-	0	0
Married	-	-	129	93.5
Widow/ er	-	-	9	6.5
Smoking History				
Never	-	-	63	45.7
Ever	-	-	74	54.3
Comorbid				
None	-	-	53	38.4
Hypertension (High Blood Pressure)	-	-	58	42.0
Stroke	-	-	0	0
Diabetes mellitus	-	-	20	14.5
Etc.	-	-	7	5.1

**Table 2 Distribution of Spiritual Intelligence of Coronary artery disease in RSD dr. Soebandi of Jember in January-February 2020**

Variable	Total (n)	Percentage (%)
Spiritual Intelligence		
Low	5	3.6
Medium	14	10.1
High	119	86.2
Total	138	100

**Table 3 Distribution of Self Efficacy in Patients with Coronary artery disease in RSD dr. Soebandi of Jember in January-February 2020**

Variable	Total	Percentage (%)
Self-efficacy		
Low	3	2.2
Medium	59	42.8
High	76	55.1
Total	138	100

**Table 4. Relationship between spiritual intelligence and self-efficacy in patients with coronary artery disease in RSD dr. Soebandi of Jember**

Spiritual Intelligence	Self-efficacy						Total		P	r
	Low		Medium		High					
	f	%	f	%	f	%	f	%		
Low	2	1.4	3	2.2	0	0	5	3.6	<0.001*	0.628
Medium	1	0.7	12	8.7	1	0.7	14	10.1		

High	0	0	44	31.9	75	54.3	119	86.2
Total	3	2.2	59	42.8	76	55.1	138	100

Data were collected based on respondents' answers in the questionnaire, which were 138 respondents. Table 1 provides information that the average age of the respondents was 60 years. The majority of respondents were male (79%), one-third had primary school education (31.2%), and had a job as a civil servant (35%), not a few also earned <Rp. 2,000,000 (55.1%), almost all of them were married (93.5%), 63 people had a history of ever smoking (54.3%), and 58 people had a history of hypertension (42%). Table 2 illustrates that most respondents have high spiritual intelligence, indicated by a percentage value of 86.2%. 10.1% of respondents have moderate spiritual intelligence, and another 3.6% have low spiritual intelligence.

Table 3 illustrates that most respondents have high self-efficacy, indicated by a percentage value of 55.1%. As many as 42.8% of respondents had moderate self-efficacy, and another 2.2% had low self-efficacy. The data analysis results in table 4 using Somer's test d shows  $p = <0.001$  with a significance level ( $\alpha$ ) of 0.05, then  $p < \alpha$ . These results mean that  $H_a$  failed to be rejected. In conclusion, there is a strong relationship between spiritual intelligence with self-efficacy in CHD patients ( $p < 0.05$  and  $r = 0.628$ ) in RSD dr. Soebandi of Jember. It can then be interpreted that the higher the respondent's spiritual intelligence, the higher the self-efficacy of the respondent.

## Discussion

Coronary heart disease is an acute and life-threatening disease, but treatment requires consistent time throughout his life (Nuraeni, 2016). So that physical and psychological symptoms will appear that can worsen the patient's condition. In physical conditions in the form of chest pain, feeling tight, sexual disturbances, and weakness in activities (Rosidawati et al., 2016). Meanwhile, from a psychological perspective, anxiety and depression are also experienced by CHD patients, making them afraid of death (Hamzah et al., 2014). Therefore the importance of

controlling risk factors and self-management to maintain the health of CHD patients.

Spiritual intelligence is a person's ability to solve problems in his life so that patients with chronic diseases can improve their health. Spiritual intelligence not only improves health but can also help patients to be able to adapt in difficult times and times of loss, new situations and get out of times of stress and fear so that they find meaning or inner purpose to adjust to new conditions or new illnesses they experience (Moallemi, 2014). Self-efficacy is an essential factor in patient self-care behavior in coronary heart patients so that they can exercise self-control and self-prevention against actions that can aggravate their condition (Alizadeh et al., 2018).

The results showed that 86.2% of respondents had high spiritual intelligence. The results showed that most CHD patients have high spiritual intelligence, where the patient has the ability that is within him to face his illness to achieve recovery. It is consistent with the research (Seed, Salari, nourisaeed, Moaddab, & Roohi, 2014), which states that 90% of CHD patients have high spiritual intelligence. One is because of CHD is a chronic disease that threatens life suddenly with a heart attack that requires continuous treatment. It makes CHD patients have psychological stress in the form of pressure so that responses to stressors tend to increase their spirituality to make patients calmer in facing the problem (Seed et al., 2014).

Research by Nekouei et al. (2014), states that spiritual intelligence in CHD patients has an average of 75.5. Spiritual intelligence is an essential psychological protective factor in CHD patients, affecting the quality of life of CHD patients (Nekouei et al., 2014). Research by Abu et al. (2018), also states that spirituality has a positive relationship with cardiovascular patients' quality of life. In this case, CHD patients with high spiritual intelligence after patients try to seek treatment and treat it consistently, will surrender all efforts to God so as not to have a burden that can cause stress to improve the quality of life (Seed et al., 2014).

Patients with good spiritual intelligence

have several characteristics, including knowing the deepest motives, having a high level of awareness, being responsive to themselves, taking advantage and transcend difficulties, standing up, and being different from many people. They are also reluctant to disturb or hurt people and beings others (Kurniawati, 2018). Spiritual power can reduce anxiety and help provide positive thinking to patients with chronic illness to help in decision making in treatment strategies (Tabei, Zarei, & Joulaei, 2016). Under the study of Tajbakhsh et al.(2018), spiritual care can reduce anxiety and depression in CHD patients who will undergo Coronary Artery Bypass Graft (CABG) surgery.

The results showed that most respondents (55.1%) had good self-efficacy. One is following research Sari, Sari, & Pratiwi (2017), states that 62.86% of respondents with coronary heart disease have high self-efficacy. Research by Dewi et al. (2019) also reported that most patients, 80%, had good self-efficacy before the percutaneous coronary intervention. After the percutaneous coronary intervention, 57% of CHD patients also had good self-efficacy. Besides, research Wantiyah, Saputra, & Deviantony (2020) mentioned that patients with CHD had an average self-efficacy of 71.41 points, including in the good category.

The research results that the majority of patients have good self-efficacy related to self-efficacy formation factors consisting of cognitive processes, motivational processes, affective processes, and selection processes (Bandura, 1994). In the cognitive process where CHD patients think before taking action. High self-efficacy tends to be able to behave following expectations and commitment in carrying it out with high self-efficacy will encourage a mindset to achieve success, such as patients avoiding salty foods and trying to eat less salty foods.

Self-efficacy in patients with coronary heart disease is expected to increase their confidence to take precautions by having a healthy lifestyle so that they can support the improvement of their illness by controlling risk factors and maintaining their health (Shoufiah & Noorhidayah, 2017). The existence of CHD patients' self-efficacy can respond adaptively to overcome problems by

having the patient's confidence can improve health (Bandura, 1994). Research Shoufiah and Noorhidayah (2017), states that self-efficacy is related to the quality of life of patients with coronary heart disease.

Research results Wantiyah (2010), two factors can be related to self-efficacy, namely social support and emotional status. Right environmental conditions can improve self-efficacy. It happens when the family supports the treatment process, such as delivering treatment, reminding taking medication and monitoring the patient's status making patients more comfortable and having confidence in controlling risk factors to consistently undergo treatment (Puspita, Oktaviarini, Dyah, & Santik, 2017). The emotional response of most patients with CHD in the form of anxiety, depression, and fear of conditions can affect the patient's decision-making process related to self-efficacy. Spiritual power helps patients provide calm and positive thoughts (Tabei et al., 2016).

Age is one factor that influences the self-efficacy of older individuals who have better self-efficacy in mastering coping and are more organized or directed than young people (Howsepian & Merluzzi, 2009). Wantiyah's research (2010) states that women have a 1.19 times higher chance of efficacy compared to men in CHD patients. So that age and sex have a relationship with the level of self-efficacy of CHD patients. Also, each person has a different ability to overcome the problem.

The analysis results of the relationship between spiritual intelligence and self-efficacy in CHD patient shows a correlation between spiritual intelligence and self-efficacy. A correlation value of 0.628 baselines indicates that the higher the spiritual intelligence, the higher the self-efficacy with the correlation between influential variables. This research is also in line with the study of Nekouei et al. (2014), which shows that there is a relationship between spiritual intelligence and self-efficacy that can affect the quality of life in CHD patients.

The relationship between spiritual intelligence and self-efficacy is due to the process of forming self-efficacy. It goes through four stages, namely cognitive,

motivation, affective and selection processes related to the presence of stressors in CHD patients, which makes patients respond cognitively by believing that if God decreases disease, undoubtedly God also decreases the cure (Gusman, 2006). Spiritual intelligence is influenced by God's spots and brain nerves, where God has created an organ in humans so that humans recognize His God (Zohar & Marshall, 2007). The existence of these thoughts can motivate CHD patients to continue to try to treat and improve spirituality.

Research by Nuraeni, Ibrahim, & Rizmadewi (2013) stated that there are nine respondents of CHD patients who claim that God is a source of strength. Worship or communication with God is a source of power, hope is a source of strength, spirituality is a request for forgiveness (repentance), and sense gratitude as a strength source. It is stated that getting closer and resigning to God will strengthen CHD patients and become a source of power in their lives. Having spiritual intelligence will motivate patients in their problem-solving process to choose the best actions for their health. In the cognitive process of spiritual intelligence, the patient thinks correctly in overcoming his condition with the certainty that every illness has a cure. So that there is a motivational process that will make patients have the spirit to continue to treat and accept their current conditions (Saam & Wahyuni, 2012).

The next formation process is the affective process, where after the patient is motivated, the patient will have confidence in his ability. However, this is influenced by others' level of success and experience that can make other patients motivated. The behavioral response will be in line with cognitive and affective reactions in the process of forming the patient's self-efficacy so that it can affect the patient's behavioral response, namely patience, endeavor, and trust in dealing with the disease. Those are the characteristics of people who have spiritual intelligence (Kurniawati, 2018).

Researchers concluded there is a positive relationship between spiritual intelligence and self-efficacy associated with factors that exist, namely the God Spot and nerve cells of the brain. The relationship between spiritual

intelligence and self-efficacy can be seen from the relation of spiritual intelligence that affects the process of forming the patient's self-efficacy. Nurses are one of the factors that can help patients improve their health through the provision of holistic nursing care by paying attention to spiritual care and self-efficacy. This can be done by conducting spiritual studies in which there is spiritual intelligence in the nursing process and to identify the patient's spiritual intelligence. Spiritual intelligence that comes from within a patient can motivate patients to have confidence so that they can have functional self-efficacy through cognitive processes, motivational processes, affective, and selective. But it is also influenced by social support, emotional status, age, and gender.

## **Conclusion**

This research concludes that most of the respondents already have spiritual intelligence and good self-efficacy. Spiritual intelligence is significantly associated with self-efficacy in CHD patients, so the higher the spiritual intelligence in CHD patients, the self-efficacy will also be higher.

This research can be used as an evaluation and input to improve the quality of services, especially the provision of holistic nursing care. Providing comprehensive nursing care to CHD patients is very beneficial because it can be used to notice how spiritual intelligence and self-efficacy are owned by patients to improve the quality of service to patients. Besides, this research has limitations to discuss the relationship between spiritual intelligence and self-efficacy and the relationship between the two variables with characteristics in CHD patients. Therefore further research can explore the factors that can be related to the involvement of spiritual intelligence and self-efficacy.

## **References**

Abu, H. O., Ulbricht, C., Ding, E., Allison, J. J., Salmoirago-Blotcher, E., Goldberg, R. J., & Kiefe, C. I. (2018). Association of religiosity and spirituality with quality of

- life in patients with cardiovascular disease: a systematic review. *Quality of Life Research*, 27(11), 2777–2797. <https://doi.org/10.1007/s11136-018-1906-4>
- Alizadeh, M., Feizollahzadeh, H., Abdollahzadeh, F., Hasankhani, H., Dadashzadeh, A., & Rezaei, T. (2018). The Relationship Between Selfefficacy and Compliance With Selfcare Behaviors in Patients With Acute Coronary Syndrome After Coronary Angioplasty in Shahid Madani Hospital, 2016:A Health Belief Model. *Journal of Research in Medical and Dental Science*, 6(3), 415–420. <https://doi.org/10.24896/jrmds.20186364>
- American Heart Assosiation. (2015, July 31). *Coronary Heart Disease*. The American Heart Assosiation. Retrieved february 19, 2020, from <https://www.heart.org/en/health-topics/consumer-healthcare/what-is-cardiovascular-disease/coronary-artery-disease>
- Bandura, A. (1994). Self-Efficacy. *Encyclopedia of Mental Health*, 4(1994), 1994.
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior Vol 4* ( pp. 71-81). Academic Press.
- Dev, R. D. O., Kamalden, T. F. T., Geok, S. K., Abdullah, M. C., Ayub, A. F. M., & Ismail, I. A. (2018). Emotional intelligence, spiritual intelligence, self-efficacy and health behaviors: Implications for quality health. *International Journal of Academic Research in Business and Social Sciences*, 8(7), 794–809. <https://doi.org/10.6007/ijarbss/v8-i7/4420>
- Gusmian, I. (2006). *Setiap Saat Bersama Allah: Doa-Doa Pilihan Penetrans Jiwa (every moment with Allah: dua of choice)*. Mizan Pustaka.
- Hamzah, I. F., Dewi, E. K., & Suparno. (2014). Makna Sakit Pada Penderita Penyakit Jantung Koroner Studi Fenomenologis (meaning of pain in coronary hearth disease patients: phenomenologi study). *Jurnal Psikologi Undip*, 13(2), 1–10. <https://doi.org/10.3906/elk-1301-164>
- Howsepian, B. A., & Merluzzi, T. V. (2009). Religious beliefs, social support, self-efficacy and adjustment to cancer. *Psycho-Oncology*, 18(10), 1069–1079. <https://doi.org/10.1002/pon.1442>
- Kementrian Kesehatan Republik Indonesia. (2014). Situasi kesehatan jantung (heart health situation). *Pusat Data Dan Informasi Kementrian Kesehatan RI*. Retrieved February 19, 2020, from <https://www.kemkes.go.id/download.php?file=download/pusdatin/infodatin/infodatin-jantung.pdf>
- Kementrian Kesehatan Republik Indonesia. (2018). *RS Jantung Harapan Kita pengampu rujukan kardiovaskuler (cardiovascular referral jantung harapan kita hospital)*. Kementrian Kesehatan Republik Indonesia. Retrieved February 19, 2020, from <https://www.kemkes.go.id/article/view/18111200002/rs-jantung-harapan-kita-pengampu-rujukan-kardiovaskular.html>
- Kurniawati, N. D. (2018). *Pengaruh asuhan keperawatan mind-body-spiritual (MBS) Terhadap Kecerdasan Spiritual, Ekspresi Hsp 70, eNOS, VCAM-1, DAN MCP-1 pada Pasien Penyakit Jantung Koroner*. [Doctoral's dissertation, Universitas Airlangga]. Fakultas Kedokteran Universitas Airlangga. Retrieved February 12, 2020, from <http://repository.unair.ac.id/71448/>
- Moallemi, S. (2014). Spiritual intelligence and high risk behaviors. *International Journal of High Risk Behaviors and Addiction*, 3(1), 18–20. <https://doi.org/10.5812/ijhrba.18477>
- Nekouei, K. Z., Yousefy, A., Neshat Doost, H. T., Manshaee, G., & Sadeghei, M. (2014). Structural model of psychological risk and protective factors affecting on quality of life in patients with coronary heart disease: A psychocardiology model. *Journal of Research in Medical Sciences*, 19(2), 90–98
- Norouzi, M., & Azar, F. S. (2017). Comparing spiritual intelligence and emotional expressiveness in psychosomatic patients. *Journal of Research & Health*, 7(2), 745–753. <https://doi.org/10.18869/acadpub.jrh.7.2.745>
- Nuraeni, A. (2016). Faktor yang memengaruhi kualitas hidup pasien dengan penyakit antung

koroner (factors that affect the quality of life with coronary heart disease). *Jurnal Keperawatan Padjadjaran*, 4(2), 107–116. <https://doi.org/10.24198/jkp.v4n2.1>

Nuraeni, A., Ibrahim, K., & Rizmadewi, H. (2013). Makna spiritualitas pada klien dengan sindrom koroner akut (meaning of spirituality with acute coronary syndrome patients). *Jurnal Keperawatan Padjadjaran*, 1(2), 79–87. <https://doi.org/10.24198/jkp.v1n2.3>

Pamungkas, R. A., & Usman, A. M. (2017). *Metodologi riset keperawatan (nursing research methodology)* (1st ed. CV. Trans Info Media.

Park, N., Peterson, C., Szvarca, D., Vander Molen, R. J., Kim, E. S., & Collon, K. (2014). Positive psychology and physical health: research and applications. *American Journal of Lifestyle Medicine*, 10(3), 200–206. <https://doi.org/10.1177/1559827614550277>

Pencina, M. J., Navar, A. M., Wojdyla, D., Sanchez, R. J., Khan, I., Ellassal, J., ... Sniderman, A. D. (2019). Quantifying importance of major risk factors for coronary heart disease. *Circulation*, 139(13), 1603–1611. <https://doi.org/10.1161/CIRCULATIONAHA.117.031855>

Puspita, E., Oktaviarini, E., Dyah, Y., & Santik, P. (2017). Peran keluarga dan petugas kesehatan dalam kepatuhan pengobatan penderita hipertensi di puskesmas gunungpati Kota Semarang. *Jurnal Kesehatan Masyarakat Indonersia*, 12(2), 25–32.

Rosidawati, I., Ibrahim, K., Nuraeni, A., Muhammadiyah, U., Keperawatan, F., & Padjadjaran, U. (2016). Kualitas Hidup Pasien Pasca Bedah Pintas Arteri Koroner (BPAK ) Quality of Life among Patients with Post Coronary Artery Bypass Surgery. *Jurnal Keperawatan Padjadjaran*, 4(2), 151–161. <https://doi.org/10.24198/jkp.v4i2.238>

Saam, Z., & Wahyuni, S. (2012). *Psikolog Keperawatan* (1st ed.). PT Rajagrafindo Persada.

Sari, E. A., Sari, S. P., & Pratiwi, S. H. (2017). Community Self-Efficacy of Coronary Heart Disease Based on Characteristic Risk Faktors.

*NurseLine Journal*, 2(2), 65–71. <https://doi.org/10.19184/nlj.v3i2.8341>

Seed, A. N., Salari, A., nourisaheed, A., Moaddab, F., & Roohi, L. (2014). Spiritual intelligence and its related factors in patients with ischemic heart disease. *Journal of Nursing and Midwifery Sciences*, 1(3), 49–54. <https://doi.org/10.18869/acadpub.jnms.1.3.49>

Shoufiah, R., & Noorhidayah. (2017). *Efikasi diri berhubungan dengan Kualitas Hidup Pasien Penyakit Jantung Koroner*. Kementerian Kesehatan Republik Indonesia.

Tabei, S. Z., Zarei, N., & Joulaei, H. (2016). The impact of spirituality on health. *Shiraz E Medical Journal*, 17(6), 1–6. <https://doi.org/10.17795/semj39053>

Tajbakhsh, F., Hosseini, M. A., Fallahi-Khoshknab, M., Rokofian, A., Rahgozar, M., & Davidson, P. M. (2018). The effect of spiritual care on depression in patients following coronary artery bypass surgery: A randomized controlled trial. *Religions*, 9(159), 2–8. <https://doi.org/10.3390/rel9050159>

Wantiyah. (2010). *Analisis Faktor- Faktor yang Mempengaruhi Efikasi Diri Pasien Penyakit Jantung Koroner dalam Konteks Asuhan Keperawatan di RSD dr. Soebandi Jember*. [Master's thesis, University of Indonesia]. Universitas Indonesia. Retrieved february 8, 2020, from <https://lontar.ui.ac.id/file?file=pdf/abstrak-137273.pdf>

Wantiyah, Saputra, M. R., & Deviantony, F. (2020). Self-Efficacy And Health Status In Coronary Artery Disease Patients. *Jurnal Ners*, 15(1). <https://doi.org/10.20473/jn.v15i1.17628>

Xu, X. Y., Kwan, R. Y. C., & Leung, A. Y. M. (2019). Factors associated with the risk of cardiovascular disease in family caregivers of people with dementia: a systematic review. *Journal of International Medical Research*, 0(0), 1–20. <https://doi.org/10.1177/0300060519845472>

Zohar, D., & Marshall, I. (2007). *SQ: Spiritual Intelligence* (IX). Great Britani.

## The Effect of Reciting the Holy Qur'an to the Speaking Ability and Spirituality Level of Stroke Patient with Motor Aphasia

Slamet Purnomo<sup>1</sup>, Ikhlas M Jenie<sup>2</sup>

<sup>1</sup>Faculty of Health Sciences, Universitas Muhammadiyah Kalimantan Timur, Samarinda, Indonesia

<sup>2</sup>Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta, Yogyakarta, Indonesia

*Corresponding Email: pslametpurnomo@yahoo.co.id*

Submitted: 18-08-2020 Accepted: 05-11-2020 Published: 01-12-2020

### Abstract

Reading therapy is a stimulation effort to improve language function of a patient with motor aphasia. This study aim was to examine the effect of reading therapy using holy Qur'an to the speaking ability and spirituality level of stroke patient with aphasia. This experimental study used nonequivalent control group design with 20 persons as sample, divided to 10 persons as the intervention group and 10 persons in the control group used purposive sampling technique. Measurement of the speaking ability used Frenchay Aphasia Screening Test (FAST) questionnaire and spirituality level used Functional Assessment of Chronic Illness Therapy (FACIT) Sp 12 questionnaire. The Result was significant improvement of speaking ability in the intervention group with mean difference was mean±SD (1,60±1,075). Post-experimental difference test showed the difference of improvement of speaking ability between two groups, P=0,034. The spirituality level also significantly improved in the intervention group with mean difference was mean±SD (6,80±3,190). Post experimental difference test showed the improvement of spirituality level in both groups with P=0,005. This therapy can be used as a rehabilitation training activity independently at home to improve the speaking ability also as part of spiritual activity.

**Keywords:** Aphasia, reciting Qur'an, speaking ability, spirituality.

## **Introduction**

The brain has an important role in human evolution. Vascularization problem at the brain will destroy its function which can cause a stroke. Stroke was at the second level of the causing death disease in the world, with 6.7 million of mortality each year (WHO, 2015). In Indonesia, stroke was at the third place the most common disease after heart disease and cancer. Data the Indonesian Health Profile mentioned that about 57.9% of stroke disease have been diagnosed by the healthcare professional (Ministry of Health Indonesia, 2018).

Stroke can lead to death in about 28.5% patients, while remaining of them suffered for partial or total paralysis. Furthermore, only about 15% of them can be fully recovered from the stroke attack and disability (Khairunnisa & Fitriyani, 2014). It has been estimated that about 21-38% stroke patient will have risk for aphasia (Lazar & Boehme, 2017). A study from one hospital at Indonesia showed that 13.2% of patients suffered for aphasia (Purnomo et al., 2016). A disability such as language and communication disorder in aphasia was the common problem in stroke patient (Palmer et al., 2015).

Reading-based therapy was a rehabilitative effort for the aphasia patient (Purnomo & Makiyah, 2019). Reading therapy is an effort to stimulate and improve the patient's language function (Singh & Pauranik, 2017). This strategy targets for improving in idea, verbal to verbal process, and improving reading ability which the treatment focused was reading method (Richard, 2016).

Similar study using the Qur'an with the listening and memorizing method has had a positive effect on recovery (Jafar et al., 2019; Sofro & Kadarsih, 2013). While, research using the holy Qur'an with the reading method in motor aphasia has not been developed much. Several studies about reading based therapy in aphasia patients used novel or other demonstration sentences as resources (Kim & Lemke, 2016; Richard, 2016). In fact, the majority of Indonesian citizen were Moslem. This big gap became a consideration to raise the study about holy Qur'an therapy as an alternative therapy to solve the speaking problem in aphasia

patients.

Furthermore, there was a special thing that holy Qur'an had compared to others books or other reading material. The sound and rhythm from Qur'an phonetic (tajweed) produced a special voice through the letter and words management in holy Qur'an when reciting or verbalize Qur'an with voice (Kalani et al., 2016). Those things are useful to give a stimulation for sensory and motor function which will be good to be used in speaking disorder rehabilitation training. Also, reciting the holy Qur'an is a religious activity which can improve the patient's spirituality.

Patient's ill problem should not only be viewed from the physical problem, but more holistic view through bio-psycho-social and spiritual view with their mission a servant of Allah and caliph of Allah's in life. However, further empirical evidence was needed through this study to gain more knowledge about it.

## **Method**

This study was quasi-experimental study used nonequivalent control group design, which using reciting the holy Qur'an as a treatment for the intervention group and observation in control group. This study has been approved an ethical clearance from Ethical committee of Abdul Wahab Sjahranie Samarinda Regional Public State Hospital no: 041/KEPK-AWS/III/2019 and ethical committee of Universitas 'Aisiyah Yogyakarta no: 948/KEP-UNISA/III/2019.

Participants have been selected using a purposive sampling technique, which is sampling based on specific consideration according to the study purpose and criteria. Inclusion criteria were; ischemia stroke patient after 1 week or more attack experience, had motor aphasia, and able to receive direction. Exclusion criteria were critical condition and unstable hemodynamic state. Only 20 persons of the patients have been fulfilled the criteria to be respondents. 20 respondents have been divided into two groups, 10 persons in the intervention group, and 10 persons in the control group. The study did not randomize the respondent because there's a limitation related to amount of samples. It has been

suggested for the future study to include more respondents for gathering more various result.

This study has been conducted in April 2019 at the patient's home based on the data from Abdul Wahab Sjahranie Samarinda Regional Public State Hospital. The Intervention group try to reciting holy Qur'an surah Al-Fatihah, Al-Ikhlash, Al-Falaq and An-Naas and the other group (control group) receives the regular rehabilitation base on schedule from the hospital.

The Treatment for intervention group has been given in 12 meeting sessions in two weeks. Respondents have been given rest time for 1 day in each week. The duration of intervention in each session is about 15-20 minutes per day and led by the researcher than participant repeating the reciting Qur'an after researcher to reach appropriate rule of reciting Qur'an (tajweed). In conducting this study, researcher has passed the holy Qur'an test from Islamic Studies and Experience Institution (LPPI) from Universitas

Muhammadiyah no: 001/A.4-1/LPPI/I/2019.

Measurement for the speaking ability used Frenchay Aphasia Screening Test (FAST) questionnaire and Functional Assessment of Chronic Illness Therapy (FACIT) Sp 12 questionnaire for spirituality level measure. The measurement process has been done before intervention and two weeks after intervention. Both of measurements have been standardized and translated to Indonesian Language. The finding results have been analyzed used statistical program SPSS 20.0 version. Univariate analysis used for the data included sex, education, stroke frequency and other accompanying disease which presented in mean, deviation standard and minimum-maximum value. The bivariate analysis used the parametric test (paired t-test and independent t-test) to evaluate the effectiveness of therapy.

## Results

**Table 1 Distribution of Demographic Characteristics of Respondents**

Characteristics	Intervention Group (n=10)		Control Group (n=10)		P value
	F	%	F	%	
Sex					
Male	4	40	3	30	0.648
Female	6	60	7	70	
Education					
Primary school	1	10	2	20	0.218
Junior high school	3	30	5	50	
Senior high school	4	40	2	20	
College	2	20	1	10	
Stroke frequency					
1 time	6	60	5	50	0.661
> 1 time	4	40	5	50	
Comorbidities					
Hypertension	9	64.3	8	53.3	0.484
Diabetes Mellitus (DM)	5	35.7	7	46.7	
Age					
Mean±SD	54.80±8.052		57.20±11.203		0.589

Blood Pressure			
Systolic			
Mean±SD	148.50±12.756	149.30±19.766	0.916
Diastolic			
Mean±SD	96.90±3.281	96.20±6.746	0.771

**Table 2 Difference in Speaking Ability between the Intervention Group and Control Group**

Speaking Ability (FAST)	Intervention Group (n=10)		Control Group (n=10)		P value
	Mean	SD	Mean	SD	
Pre-test	20.10	2.183	18.40	3.026	0.167
Post-test	21.70	3.020	18.80	2.616	0.034*
Delta	1.60	1.075	0.40	0.699	0.008*

\*P value <0.05 based on the Independent-T test

The delta value is the difference between the post-test and pre-test results

**Table 3 Difference in Spirituality Level between the Intervention Group and Control Group**

Speaking Ability (FAST)	Intervention Group (n=10)		Control Group (n=10)		P value
	Mean	SD	Mean	SD	
Pre-test	31.60	4.789	30,70	5.376	0.697
Post-test	38.40	3.864	32,20	4.803	0.005*
Delta	6.80	3.190	1,50	1.780	0.001*

\*P value <0.05 based on the Independent-T test

The delta value is the difference between the post-test and pre-test results

Based on the Table 1, majority of respondents were male in the average age of 54 and 57 years old and most of them educated in Junior and Senior High School. Most of respondent experienced for the first attack of stroke. Furthermore, most of them had hypertension and diabetic mellitus as the accompanying disease. In blood pressure data, the average of systolic in intervention group was 148.50 and following by 149.30 in control group. In the other hand, the average of diastolic in intervention followed by the control group was 96.90 and 96.20.

Based on the upon table, the p-value was  $p > 0.05$  in all respondent characteristics for the differential test. The result showed that intervention and control group have same characteristic at baseline.

Result from table 2 showed that there was no significant difference in speaking ability in control and intervention group before

the treatment (pre-test) with mean±SD in intervention group was 20.10±2.183 and in control group was 18.40±3.026.

The analysis result showed that there was significant improvement in speaking ability in intervention group compared with the control group with after treatment (post-test) with mean±SD was 21,70±3,020 in intervention group and 18,80±2,616 in control group.

Furthermore, there was a significant difference between pre and post treatment. It can be showed from the delta average mean was 1.60 in intervention group and was 0.40 in intervention group.

Result from Table 3 has shown that there was no significant difference in spirituality level between intervention and control group before treatment (pre-test) with mean±SD was 31.60±4.789 in intervention group and 30.70±5.376 in control group.

The result showed significant improvement

of spirituality level after treatment (post-test) compared with control group with mean±SD was 38.40±3,864 in intervention group and 32.20±4,803 in control group.

Furthermore, there was a difference improvement in spirituality level before and after treatment. It can be showed that delta value was 6.80 in intervention group and 1.50 in control group.

## Discussion

Patient's ill problem should not only be viewed from the physical problem, but more holistic view through bio-psycho-social and spiritual view with their mission a servant of Allah and caliph of Allah's in life. A nurse is required to be able to provide care to fulfilling these needs.

This study showed that motor activity through reciting the holy Qur'an can improve the speaking ability and spirituality level in stroke patient with motor aphasia.

Reading-based Therapy Using the Holy Qur'an in Improving Speaking Ability. Basically, reading was a motor activity which can be used for training the speaking organ. The training principle was stimulating through speaking muscle training in order to improve language articulation more fluent in aphasia (Sofiatun et al., 2016). The motor movement which being created from articulation produced the sound as the same as reading which automatically will be received by the hearing system. The sound which produced by the reciting Qur'an then will stimulate parts of brain, which one of them was left brain (left hemisphere) which has function for managing the language and speaking function in the human (Mohamad et al., 2013).

This study supported by study from Jafar et al., (2019) which mentioned that the brain ability to re-manage through the brain neurons interconnection which influenced by the stimulation. A study on memorizing Qur'an Surah Taha verse 25-28th explained that can improve communication ability function. Stroke patients who always reciting and memorizing holy Qur'an will influence brain tissue neuroplasticity. The other supporting study Singh and Pauranik (2017)

explained that stimulation using reading and writing approach will be benefit in improving verbal skill.

Result from this study showed that there was difference in speaking ability between intervention and control group. Alawieh et al. (2018) mentioned that rehabilitation process included the type, time, and dosage of therapy have contributed in recovery result for stroke patient. Intervention through reciting the holy Qur'an which has been applied by the researcher have given the stimulation from the bottom up and top down phenomenon interaction path. The term top down means where the vital organ (brain and heart) determine the other organ's work. In contrast, the bottom up phenomenon, stimulation through reciting, listening, breathing, and other bodies activity also can influence the brain work activities. Reciting the holy Qur'an activity can both stimulate and interact between brain and motor function (speaking organ) which will also influence the autonomy neuron (Sofro & Kadarsih, 2013).

Reciting the holy Qur'an is managed by the regulation called Tajweed (exact verbalization) (Nayef & Wahab, 2018). Phonetic from Qur'an can give big effect to the semantic, absorbing words and phrases from Al-Qu'an. Furthermore, sound and rhythm from Qur'an phonetic produced special voice through the management of letters and words in Qur'an while read or verbalized used voice (Kalani et al., 2016). In other study also mentioned that rhythm and harmony from the holy Qur'an voices which being listened can influence the memory system of brain function (Hojjati et al., 2014).

Reading-based Therapy Using the Holy Qur'an in Improving the Spirituality Level. Patient's ill problem should not only be viewed from the physical problem, but more holistic view through bio-psycho-social and spiritual view with their mission a servant of Allah and caliph of Allah's in life. Nurses supposed to provide and involving the patient to invite them in various religious activities to fulfill their spirituality need (Pratiwi et al., 2018). Spirituality was a process of seeking the meaning of life, felling to be connected with something higher and having a self-transcendence (Weathers et al., 2016). A

person healthy was related to the physical, psychological, social, cultural, and spiritual factor balance. Spiritual was an important thing to the person to achieve the balance to improve health and life welfare degree also coping to the illness (Potter et al., 2016).

Hawari argued that reciting the holy

Qur'an is part of dhikr and praying, that is religious and spiritual elements that can provide mental strength as the basic concept of the healing process (as cited in Kusuma, 2017). Several verses describe that the Qur'an is a medicine (syifa'un) for humans, as in the verses of the Al-Qur'an (Al-Israa:82)

﴿٨٢﴾ وَنَزَّلْنَا مِنَ الْقُرْآنِ مَا هُوَ شِفَاءٌ وَرَحْمَةٌ لِّلْمُؤْمِنِينَ ۖ وَلَا يَزِيدُ الظَّالِمِينَ إِلَّا خَسَارًا

“We send down (stage by stage) in the Qur'an that which is a healing and a mercy to those who believe: to the unjust it causes nothing but loss after loss.”

In order to obtain the potent medicine as stated in the Qur'an, people must serve to Allah faithfully, always obeying His commands without complaining and stay away from His prohibitions. Praying, reciting Qur'an, and being thankful also asking forgiveness when facing difficulties will be helpful to deal with life matters and being healthier. Al-Mu'awwidhat Surahs (al-Ikhlâs, al-Falaq dan an-Nas) have own specialty. In other hand, surah al-Fatihah contains of prayer of the guidance, lordship, and mercy of Allah, almighty (Ahmad & Ramli, 2016).

In supporting this study, study form Jafar et al. (2019) mentioned that reading and reciting the holy Qur'an can improve the quality of life. The one who reciting and understanding Qur'an can gain understanding about the meaning of life and have a good health spirituality. The one who has good spirituality experience will be easier to forgive, accepting the difficulties/illnesses, death and have a good quality of life (Potter et al., 2016).

Stroke and aphasia are chronic diseases. The patient rehabilitation requires long-term treatment that involves family care. It is also important to improve the spiritual well-being of the patient's family through interventions such as a bereavement live-review to maximize care in chronic patients (A'la et al., 2017).

In this study, also found that there was a significant difference in control group before and after treatment. There are several factors which can influence the personal spirituality.

Wiksuarini (2018) mentioned that one of them was illness. Health condition which can make someone to be suffered will produce the negative effect due to of the feeling being punished or leaved by the God. In other hand, this also can be a positive motivation to aware them to back to the God, the one who has control on him or her.

## Conclusion

Reading therapy using the holy Qur'an can improve the speaking ability and spiritual level. This therapy can be used for a rehabilitation training activity for stroke patient with motor aphasia with speaking disorder. The other benefit was this therapy can be practiced at home independently by the patient as the therapy also as spiritual activity.

There are several limitations of this study during the study process, include:

1. Regarding to this reciting the holy Qur'an therapy effect, reciting Qur'an can be proposed as a nursing intervention to improve speaking disorder. There is another limitation, the reciting Qur'an therapy might be limited to be used with non-Moslems population, but it does not mean that non-Moslem populations are not allowed to read the Qur'an. The future study, it will be good to do further study to see the implication of this therapy to the non-Muslim population if possible.
2. In this study, the researcher did not randomize the respondent because have a limitation related to the amount of samples. For further study to minimize bias, research with the RCT method should be done.

3. In this study, patient has other factors

related to the aphasia such as the area of brain damage, damage location which could not be measured by the researcher since they were need for further diagnostic and other supporting tests. Financial limitation was the issue. For further study, it will be better to be explored more to have more maximum result with the diagnostic pictures.

## References

- Ahmad, K., & Ramli, M. A. (2016). Understanding the Use of Ruqyah (Healing Method Based on The Quran and Hadith) in the Treatment of Disease: Analysis based on Fiqh al-Hadith Al-Imam Al-Bukhari. *Al-Bayan-Journal Of Qur'an and Hadist Studies*, 38. <https://doi.org/10.1163/22321969-12340038>
- A'la, M. Z., Yosep, I., & Agustina, H. R. (2017). Pengaruh Bereavement Life Review terhadap Kesejahteraan Spiritual pada Keluarga Pasien Stroke (bereavement life review effect to spiritual well-being to stroke patients family). *Jurnal Keperawatan Padjadjaran*, 5(2). <https://doi.org/10.24198/jkp.v5i2.526>
- Alawieh, A., Zhao, J., & Feng, W. (2018). Factors affecting post-stroke motor recovery: Implications on neurotherapy after brain injury. *Behavioural Brain Research*, 340, 94–101. <https://doi.org/10.1016/j.bbr.2016.08.029>
- Hojjati, A., Rahimi, A., Farehani, M. D., Sobhi-Gharamaleki, N., & Alian, B. (2014). Effectiveness of Quran Tune on Memory in children. *Procedia - Social and Behavioral Sciences*, 114, 283–286. <https://doi.org/10.1016/j.sbspro.2013.12.699>
- Jafar, I., Hartanto, O., Suminah, S., & Sutisna Sulaeman, E. (2019). The Effect of Memorizing the Al Quran on Quality of Life in Stroke Patients With Aphasia Motoric Disorders. *Global Journal of Health Science*, 11, 29. <https://doi.org/10.5539/gjhs.v11n7p29>
- Kalani, N., Modabber, M. H., Jahromi, H. K., & Tafvizi, M. D. (2016). Quran's Phonetic and Marvelous Semantic Effects. *Journal of Fundamental and Applied Sciences*, 8(2S), 20. <https://doi.org/10.4314/jfas.v8i2s.47>
- Khairunnisa, N., & Fitriyani. (2014). Hemiparase Sinistra, Parase Nervus VII, IX, X, XII e.c Stroke Non-Hemorrhagic. *Medula*, 2(3), 8.
- Kim, E. S., & Lemke, S. F. (2016). Behavioural and eye-movement outcomes in response to text-based reading treatment for acquired alexia. *Neuropsychological Rehabilitation*, 26(1), 60–86. <https://doi.org/10.1080/09602011.2014.999688>
- Kusuma, A. B. (2017). Pendekatan Psychotherapy AlQuran Dalam Gangguan Kesehatan Mental (psychotherapy AlQuran approach in mental health disorders) (Suatu Kajian Psikologi Agama). *Journal Al-Manar*, 6(1), Article 1. <https://doi.org/10.36668/jal.v6i1.22>
- Lazar, R. M., & Boehme, A. K. (2017). Aphasia As a Predictor of Stroke Outcome. *Current Neurology and Neuroscience Reports*, 17(11). <https://doi.org/10.1007/s11910-017-0797-z>
- Ministry of Health Indonesia. (2018). *Profil Kesehatan Indonesia Tahun 2017 (Indonesia health profile)*. Kementrian Kesehatan RI.
- Mohamad, S. P., Yusoff, Z. M., & Adli, D. S. H. (2013). Sound Therapy Through Quranic Recitation in Dealing With Emotional And Verbal Motor Skills Problems of Children With Autism. *International Journal of Quranic*, 5(2), 21.
- Nayef, E. G., & Wahab, M. N. A. (2018). The Effect of Recitation Quran on the Human Emotions. *International Journal of Academic Research in Business and Social Sciences*, 8, (21). <http://dx.doi.org/10.6007/IJARBS/v8-i2/3852>
- Palmer, R., Cooper, C., Enderby, P., Brady, M., Julious, S., Bowen, A., & Latimer, N. (2015). Clinical and cost effectiveness of computer treatment for aphasia post stroke (Big CACTUS): Study protocol for

- a randomised controlled trial. *Trials*, 16(1). <https://doi.org/10.1186/s13063-014-0527-7>
- Potter, P. A., Perry, A. G., Stockert, P., & Hall, A. (2016). *Fundamentals of Nursing* (9 ed). Elsevier Health Sciences.
- Pratiwi, S. H., Sari, E. A., & Mirwanti, R. (2018). Spiritual Needs of Post-Stroke Patients in the Rehabilitation Phase. *Jurnal Keperawatan Padjadjaran*, 6(3), Article 3. <https://doi.org/10.24198/jkp.v6i3.989>
- Purnomo, A. M., Sengkey, L. S., & Damopolii, C. A. (2016). Angka kejadian afasia pada stroke di Instalasi Rehabilitasi Medik RSUP Prof. Dr. R. D. Kandou Manado tahun 2015. *Jurnal e-Clinic (eCl)*, 4(2), 6. <https://doi.org/10.35790/ecl.v4i2.14346>
- Purnomo, S., & Makiyah, S. N. N. (2019). Reading-Based Therapy in Aphasia: Literature Review. *Dinamika Kesehatan (health dynamics). Jurnal Kebidanan Dan Keperawatan*, 10(1), 349–360. <https://doi.org/10.33859/dksm.v10i1.422>
- Richard, M. E. (2016). *The Effect of an Intensive Oral Reading Program on Discourse in Chronic Mild Aphasia* [Master's thesis, University of Connecticut]. University of Connecticut. Retrieved March 9, 2020, from [https://opencommons.uconn.edu/cgi/viewcontent.cgi?article=1840&context=gs\\_theses](https://opencommons.uconn.edu/cgi/viewcontent.cgi?article=1840&context=gs_theses)
- Singh, P., & Pauranik, A. (2017). Effect of Reading and Writing Based Treatment Approaches on Verbal Output. *Journal of Neurology and Neuroscience*, 08(03). <https://doi.org/10.21767/2171-6625.1000194>
- Sofiatun, I., Kristiyawati, S. P., & Purnomo, S. E. C. (2016). Efektifitas Terapi AIUEO Dan Terapi The Token Test Terhadap Kemampuan Berbicara Pasien Stroke Yang Mengalami Afasia Di RS Mardi Rahayu Kudus. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 2(4), 9.
- Sofro, Z. M., & Kadarsih, S. (2013). *Pengembangan Penggunaan Uji Schellong, Pemetaan Dan Pengelolaan Tonus Simpatis Hubungan antara Hasil Uji Schellong dengan Faktor Kepribadian, Pajanan Surat Al-Hujurat dan Status Saraf Otonom* [Doctoral's dissertation, Universitas Gadjah Mada]. Retrieved March 9, 2020, from [http://etd.repository.ugm.ac.id/index.php?mod=penelitian\\_detail&sub=PenelitianDetail&act=view&typ=html&buku\\_id=65895](http://etd.repository.ugm.ac.id/index.php?mod=penelitian_detail&sub=PenelitianDetail&act=view&typ=html&buku_id=65895)
- Weathers, E., McCarthy, G., & Coffey, A. (2016). Concept Analysis of Spirituality: An Evolutionary Approach. *Nursing Forum*, 51(2), 79–96. <https://doi.org/10.1111/nuf.12128>
- WHO, (World Health Organization). (2015). *The top 10 causes of death*. Retrieved March 12, 2020 <http://www.who.int/mediacentre/factsheets/fs310/en/>
- Wiksuarini, E. (2018). *Spiritualitas, Deperesi Dan Kualitas Hidup Pada Pasien Kanker Di Rumah Sakit Umum Daerah Provinsi NTB* [Master's thesis, Universitas Muhammadiyah Yogyakarta]. Universitas Muhammadiyah Yogyakarta. Retrieve March 12, 2020, from <http://repository.umy.ac.id/handle/123456789/22328>

## Symptom Burden's Associated Factors among Hemodialysis Patients

Early Octavia Limbong, Tuti Pahria\*, Sri Hartati Pratiwi  
Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia  
*Corresponding Email: tuti.pahria@unpad.ac.id*

Submitted: 19-08-2020 Accepted: 05-11-2020 Published: 01-12-2020

### Abstract

Many patients with chronic kidney disease undergoing hemodialysis (CKD-HD) had a high symptom burden, which can worsen their health conditions and quality of life. The known factors associated to symptom burden were age, gender, hemodialysis (HD) session duration, post dialysis recovery time, hemoglobin level, nutrition status, physical activity, depression level and social support. The aim of this study was to analyze the most dominant factor associated to symptom burden among CKD-HD patients. Using a cross-sectional design, a convenience sample of eighty-five respondents were recruited from HD unit at Adventist Bandung Hospital, who underwent HD > 3 months, HD frequency 2-3 times a week, aged  $\geq 18$  years, able to communicate and speak Indonesian. Data were retrieved via seven self-reported questionnaires and health records, and the symptom burden was assessed using the validated Indonesian version of the CKD-Symptom Burden Index. The data was analysed with Spearman correlation test, Chi square test, and multivariate logistic regression. Based on quartile category, most of the respondents (50.6%) had a high symptom burden ( $33.56 \pm 12.23$ ). The factors significantly associated to symptom burden were age ( $p=0.015$ ), post-dialysis recovery time ( $p=0.007$ ) and depression level ( $p=0.000$ ). In the final model, duration of HD session (OR=5.27, 95% CI 1.50-18.49) and depression level (OR=8.84, 95% CI 2.57-30.36) were the factors associated to high symptom burden. Depression level was the most dominant factor associated to high symptom burden. CKD-HD patients with depression are more at risk of experiencing a high symptom burden. Thus, symptom management may consider to modify depression level factor by screening for depression, providing assistance and nursing interventions, or developing depression-related interventions to reduce symptom burden in CKD-HD patients.

**Keywords:** Hemodialysis, physiology, psychology, situational, symptom burden.

## Introduction

Patient with chronic kidney disease (CKD) who underwent hemodialysis was also known as CKD-HD (PERNEFRI, 2011). CKD-HD was one of the groups with a high symptom burden compared to a group of patients with peritoneal dialysis and CKD 4 & 5 non dialysis (Almutary, Bonner, & Douglas, 2016). In 2018, CKD 5 prevalence in the US were 124,456 patients and 87.5% had hemodialysis (HD) (USRDS, 2018). In Indonesia, in 2018, there were 132,142 CKD 5 patients and 98 % had HD actively (IRR, 2018). Even though HD can replace some of the normal kidney physiologic functions and prolong the life expectancy, but HD could not cure the comorbidity and the patient's uremic symptoms was still high (Almutary, Bonner, & Douglas, 2013).

Symptom burden was defined as a combination of several subjective symptoms, physically and psychologically from frequency dimension, severity, duration and symptom distress experienced by the patients (Desbiens, 1999). Patient with CKD-HD might have many physical and psychological symptoms at once from several sources because CKD itself had a multi systemic effect which the symptoms could appear simultaneously and interrelated, it turned to become symptom burden and affected to the patient's health (Li, Xie, Yang, & Pang, 2018).

High symptom burden in CKD-HD patient had an adverse impact to a patient's life quality (Song et al., 2018; Danquah et al., 2010; Delmas et al., 2017; Lowney et al., 2015) and decrease physical performance (Kopple et al., 2015), physical activity level (Clarke et al., 2015), and life well-being (Song et al., 2018). Further, Sexton et al. (2016) research stated that one of the factor found associated to mortality risk was a higher symptom burden.

Based on its characteristic, symptom burden was conceptualized as multidimensions, which was prevalence, distress or disturbance, severity, and symptoms frequency (Gapstur, 2007). The previous study revealed that CKD-HD patient's symptom burden score was  $23.36 \pm 16.99$  (Almutary et al., 2016); and  $29.6 \pm 16.8$  (Karasneh et al., 2020) using

Chronic Kidney Disease-Symptom Burden Index (CKD-SBI). Commonly the CKD-HD patients had  $15.32 \pm 7.65$  symptoms, twice higher than any other groups (PD, CKD 4&5 non dialysis), four most common symptoms were fatigue, joint pain, pruritus or itch, and lack of appetite (Almutary et al., 2016). The most disturbing symptoms were tiredness, difficulty to fall asleep, headache, difficulty to stay asleep, dry skin, numb/tingling, joint pain and pruritus or itch (Danquah et al., 2010). The most severe symptoms were sleep disorder, skin disorder, bone or joint pain, coughing, muscle pain and sexual problem (Almutary et al., 2016). According to Davison and Jhangri (2010), the symptoms severity level was on moderate to severe category. The most frequent symptoms experienced were sleep disorder, skin disorder, bone or joint pain, restless leg, dizziness and cough (Almutary et al., 2016).

One of the nursing concept focused on symptom management was unpleasant symptoms theory (TOUS). TOUS was based on three major components which were symptoms, symptoms associated factors (physiology, psychology, situational) and a client performance (Lenz et al., 1997). Therefore, this research had made TOUS as a guidance to identify the symptom burden associated factors. In the previous research, the identified variables associated to symptom burden were age (Almutary, Bonner, & Douglas, 2016; Caplin, Kumar, & Davenport, 2011; Danquah et al., 2010; Song et al., 2018), gender (Almutary et al., 2016; Caplin, Kumar, & Davenport, 2011; Danquah et al., 2010; Karasneh et al. 2020), race (Caplin, Kumar, & Davenport, 2011), HD modality itself (Almutary et al., 2016; Cervantes et al., 2018), HD session duration (Caplin, Kumar, & Davenport, 2011), post dialysis recovery time (Caplin, Kumar, & Davenport, 2011; Lopes et al., 2014; Rayner et al., 2014), hemoglobin (Hb) level (Yu, Huang, & Tsai, 2012), nutritional status (Randall et al., 2019), physical activity (Ng et al., 2020; Song et al., 2018), depression level (Song et al., 2018; Son et al., 2009; Wan Zukiman et al., 2017), hemodialysis process at the HD centre (Caplin, Kumar, & Davenport, 2011), and social support (Dano et al., 2018; Gao et al., 2016). But, there were some inconsistent

results among those factors and there was not any previous research whom evaluate the most affected factor to symptom burden in CKD-HD patients population.

This research was made to analyse the most dominant factor associated to symptom burden among variable factors (age, gender, duration of HD session, recovery time, Hb level, nutritional status, physical activity, depression level and social support). Thus, the symptom management could consider to modify the most associated factor to symptom burden and was expected to reduce the CKD-HD patient's symptom burden.

## Method

This study was a cross sectional design and convenience sampling technique was used to collected the samples with inclusive CKD-HD patient criteria who had >3 months HD, with 2-3 times HD frequency a week, patient was  $\geq 18$  years old, able to communicate and to speak in Indonesian. The sample size of this study used rule of thumb formula (Roscoe 1982 in Sugiyono, 2018), the number of sample recommended should be at least 10 times the number of research variables, it was apparently 100 respondents. From the 118 accessible populations only eighty-five CKD-HD patients were involved in this study. Since, thirty patients were involved in pilot study of Indonesian version of CKD-Symptom Burden Index (CKD-SBI) and recovery time post dialysis that should had been carried out in another HD unit, but the related parties did not provide permission due to pandemic of Coronavirus Disease (COVID-19), and three patients died during the study.

There were seven questionnaires in this study: 1) Instruments for collecting demographic data, consisting of age, gender, HD sessions duration, Hb levels; 2) Nutritional status measured by the Dialysis Malnutrition Score (DMS) (Kalantar-Zadeh et al., 1999). DMS was available in Indonesian in Nur's (2017) study with the validity test that the sensitivity and specificity are good, 81.3% and 71.4%; 3) Depression level measured by the Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001). PHQ-9 has been

translated into Indonesian in Linden's (2019) study with the reliability test results of the intraclass coefficient is 0.713 and at the construct validity there was a correlation between PHQ-9 and the Beck Depression Index; 4) Physical activity measured by the Rapid Assessment of Physical Activity (RAPA-1) (Topolski et al., 2006), which was translated in Indonesian and published in the guidebook Program at Workplace by the Kementrian Kesehatan RI (2016); 5) Social support was measured by the Medical Outcomes Study: Social Support Survey (MOS-SSS) (Sherbourne & Stewart, 1991). MOS-SSS was translated in Indonesian in the study of Abrori and Ahmad (2018), the validity and reliability test stated that each MOS-SSS domain had a positive and significant correlation (0.72-0.89); 6) Recovery time post dialysis (Lindsay et al., 1999) was not available in Indonesian, it was adapted into Indonesian and was permitted by the developer of the questionnaire. Questionnaire translation was done by Brislin (1970) method, through direct translation, back-translation, decentering by asking the item content relevancy evaluation from three experts. The item-content validity index (i-CVI) score was 0.67, this showed that item validity content was not good enough. Then, the recovery time question was revised to "How long does it take you to recover (back to normal condition, return to activity) after hemodialysis session?"; 7) Symptom burden was measured by the CKD-Symptom Burden Index (CKD-SBI) (Almutary et al., 2015), assessing 32 multidimensional CKD-related symptoms (prevalence, distress, severity, frequency). The total symptom burden is the sum of the scores for each dimension and then multiplying the result by 0.1008 (constant number), the CKD-SBI total score ranges from 0-100. This questionnaire was also adapted into Indonesian and was permitted by the developer of the questionnaire. The translation was carried out using the Brislin (1970) method, the i-CVI CKD-SBI value was 0.98 ( $\geq 0.80$ ), which means good (Polit & Beck, 2004). Next, CKD-SBI questionnaire reliability was tested on 30 respondents, using Cronbach's Alpha with reliability coefficient score in all burden dimensions was above 0.80, which means reliable. Symptom burden

was categorized based on symptom burden quartile score into three categories (Karasneh et al., 2020) low, moderate and high.

The data was analysed through univariate, bivariate with Spearman correlation test and contingency coefficient with Chi square test. Significant level was  $\alpha < 0,05$ . Multivariate analysis was using logistic regression with enter method, during the analysis, the symptom burden categories were split into the new dichotomous variables.

Ethical approval was obtained from the research ethics committee of Padjadjaran University, Bandung (reference number: 473/UN6.KEP/EC/2020. Date 12/05/2020). Written informed consent was obtained from the respondents before data collection and data was collected for a month (May-June 2020).

**Results**

**Table 1 Respondent Characteristics, Independent Variables and Symptom Burden on CKD-HD Patients in HD Unit at Adventist Hospital Bandung**

Variable	Total Sample N (%)	Low N (%)	Moderate N (%)	High N (%)	r	p-value
Age (year)						
Mean SD	50.68±13.53	52.86±13.13	55.76±13.69	47.14±12.91	-0.262	0.015*
Gender						
Male	48 (56.5%)	14 (29.2%)	10 (20.8%)	24 (50.0%)	0.057	0.457
Female	37 (43.5%)	7 (18.9%)	11 (29.7%)	19 (51.4%)		
Duration of HD Session						
3-4 hours	45 (52.9%)	15 (33.3%)	10 (22.2%)	20 (44.4%)	0.178	0.103
>4 hours	40 (47.1%)	6 (15.0%)	11 (27.5%)	23 (57.5%)		
Recovery Time (minute)						
Mean ±SD	532.06 ± 642.01	468.33±738.68	236.43±431.54	707.56±631.32	0.293	0.007*
Hemoglobin (g/dL)						
Mean ± SD	9.59 ± 2.07	9.55±1.81	9.37±2.07	9.71±2.21	-0.056	0.611
Nutritional Status						
Normal	74 (87.1%)	20 (27.0%)	20 (27.0%)	34 (45.9%)	0.227	0.130
Mild Malnutrition	11 (12.9%)	1 (9.1%)	1 (9.1%)	9 (81.8%)		
Physical Activity						
Sedentary	9 (10.6%)	1 (11.1%)	3 (33.3%)	5 (55.6%)	-0.120	0.273
Under-active	11 (12.9%)	3 (27.3%)	3 (27.3%)	5 (45.5%)		
Mild	12 (14.1%)	4 (33.3%)	1 (8.3%)	7 (58.3%)		
Moderate	19 (22.4%)	3 (27.3%)	3 (15.8%)	13 (38.2%)		
Very active	34 (40.0%)	1 (29.4%)	11 (32.4%)	13 (38.2%)		
Depression Level						
None Depression	35 (41.2%)	15 (42.9%)	13 (37.1%)	7 (20.0%)	0.546	0.000*
Mild Depression	26 (30.6%)	4 (15.4%)	7 (26.9%)	15 (57.7%)		
Moderate Depression	16 (18.8%)	2 (12.5%)	1 (6.3%)	13 (81.3%)		

**Early Octavia Limbong: Symptom Burdens Associated Factors among Hemodialysis Patients**

Moderately Severe Depression	8 (9.4%)	0 (0.0%)	0 (0.0%)	8 (100.0%)		
<b>Social Support</b>						
Less	17 (20%)	2 (22.8%)	4 (23.5%)	11 (64.7%)	-0.161	0.141
Good	68 (80%)	19 (27.9%)	17 (25.0%)	32 (47.1%)		
<b>Comorbidity</b>						
Hypertension	51 (60.00%)					
Diabetes Mellitus	10 (11.76%)					
Cardiovascular disease	5 (5.88%)					
Tuberculosis	1 (1.18%)					
Malignancy	0 (0.00%)					
Cerebrovascular disease	1 (1.18%)					
Urinary tract disease	0 (0.00%)					
Digestive disease	0 (0.00%)					
Hepatitis C	3 (3.53%)					
Others	5 (5.88%)					
Without comorbidity	9 (10.58%)					
<b>Symptom Burden</b>						
Low	21 (24.7%)					
Moderate	21 (24.7%)					
High	43 (50.6%)					

a= Spearman Correlation test; b= Chi-Square test, \*) Significant value p<0.05

**Tabel 2 Symptom Burden Dimension on CKD-HD Patients in HD Unit at Adventist Hospital Bandung**

Symptoms	Prevalence n (%)	Distress Mean ± SD	Severity Mean ± SD	Frequency Mean ± SD
Constipation	23 (27.1)	1.14±2.31	0.95±2.02	1.11±2.36
Nausea	44 (51.8)	2.07±2.75	1.81±2.50	1.79 ±2.30
Vomit	28 (32.9)	1.34±2.37	1.22±2.26	1.02±2.04
Diarrhea	19 (22.4)	1.05±2.55	0.93±2.40	0.95±2.26
Decreased appetite	38 (44.7)	1.96±3.13	1.93±2.85	1.93±2.77
Muscle cramp	50 (58.8)	2.73±3.01	2.53±2.92	2.25±2.63
Swollen leg	30 (35.3)	1.53±2.52	1.46±2.43	1.49±2.36
Breathing difficulty	37 (43.5)	1.85±2.73	1.92±2.63	1.71±2.33
Mild headache or dizziness	49 (57.6)	2.56±3.13	2.45±2.95	2.48±2.89
Restless leg	20 (23.5)	0.73±1.92	0.64±1.77	0.63±1.74
Numbness or feet tingling	25 (29.4)	1.16±2.28	1.25±2.38	1.18±2.32

## Early Octavia Limbong: Symptom Burdens Associated Factors among Hemodialysis Patients

Fatigue or lack of energy	68 (80.0)	3.56±2.97	3.40±2.91	3.64±2.88
Coughing	35 (41.2)	1.72±2.66	1.62±2.64	1.49±2.40
Dry mouth	37 (43.5)	1.52±2.46	1.48±2.41	1.69±2.71
Bone or joint pain	49 (57.6)	2.85±3.32	2.68±3.16	2.60±3.15
Chest pain	26 (30.6)	1.34±2.35	1.27±2.38	1.16±2.12
Headache	41 (48.2)	2.36±3.27	2.19±2.97	2.13±2.98
Muscle pain	51 (60.0)	2.32±2.81	2.38±2.84	2.49±2.84
Concentration difficulty	38 (44.7)	1.75±2.55	1.69±2.49	1.82±2.59
Dry skin	62 (72.9)	3.25±3.07	3.19±2.94	3.40±3.13
Itch/pruritus	48 (56.5)	2.53±3.13	2.33±2.96	2.42±2.96
Anxiety	43 (50.6)	2.18±2.88	2.13±2.80	2.29±2.93
Nervous	29 (34.1)	1.49±2.51	1.34±2.39	1.53±2.59
Difficulty to fall asleep	62 (72.9)	4.09±3.63	4.05±3.46	4.08±3.52
Difficulty to stay asleep	58 (68.2)	4.00±3.59	3.96±3.52	4.25±3.60
Annoyed	48 (56.5)	2.53±2.96	2.44±2.87	2.53±2.90
Sad	41 (48.2)	1.98±2.76	1.95±2.65	1.95±2.64
Worried	41 (48.2)	1.88±2.74	1.88±2.68	1.89±2.68
Depression	16 (18.8)	0.73±1.98	0.73±1.98	0.78±2.01
Interest decreased in sexual intercourse	43 (50.6)	2.76±3.56	3.06±3.69	3.05±3.74
Difficulty to arouse sexually	37 (43.5)	2.45±3.43	2.71±3.62	2.73±3.67
Nocturia	17 (20.0)	0.68±1.88	0.68±1.88	0.75±1.93
Score subscale (Mean±SD)	14.80 ±7.63	66.11±51.53	64.25±50.07	65.22±48.63

### Characteristics of Respondents and Independent Variable Correlation

Table 1 indicated that mean age of the respondents was  $50.68 \pm 13.53$  years, the majority were male (56.5%), had hypertension as a comorbid (60.00%), with a 3-4 hours of HD duration session (52.9%). The post-dialysis recovery time mean was  $532.06 \pm 642.01$  minutes and the Hb level mean was  $9.59 \pm 2.07$  g / dL. In general, respondents had normal nutritional status (87.1%), had a mild to moderately severe level of depression (58.8%) and had good social support (80%). Based on the symptom burden quartile score, the majority of respondents experienced a high symptom burden (50.6%). The bivariate analysis result showed that there were three variables that had a significant relationship with symptom burden ( $p < 0.05$ ), which

were age, post-dialysis recovery time and depression level.

### Symptom Burden

Table 2 showed that the respondent experienced  $14.80 \pm 7.63$  symptoms, the five most common were fatigue, difficulty to fall asleep, dry skin, difficulty to stay asleep, and muscle pain. The five most disturbing symptoms were difficulty to fall asleep, difficulty to stay asleep, fatigue, dry skin, bone or joint pain ( $66.11 \pm 51.53$ ). The five most severe symptoms were difficulty to fall asleep, difficulty to stay asleep, fatigue, dry skin, decreased interest in sex ( $64.25 \pm 50.07$ ). The five symptoms frequently reported were difficulty to stay asleep, difficulty to fall asleep, fatigue, dry skin, decreased interest in sex ( $65.22 \pm 48.63$ ).

The total symptom burden score was  $21.21 \pm 15.68$  (data not attached) and based on the quartile of symptom burden score (table 1), the majority of respondents experienced high symptom burden (50.6%).

**Most Dominant Factor Related to Symptom Burden**

The independent variables which had a p value  $<0.25$  on the bivariate (six variables) were included in the logistic regression analysis. In the final modeling, there were two variables that had a significant value, the duration of the HD session ( $p= 0.009$ ) and depression level ( $p= 0.001$ ). In the next step, an interaction between the two variables was carried out with the result of  $p=0.738$  ( $p> 0.05$ ) (table 3), which meant that there was no interaction between the duration of the HD

session and the level of depression. The valid model was a model without any interaction; thus, the duration of HD session and the level of depression were entered into the final model (table 4).

The most dominant factor variable related to symptom burden based on the Odds Ratio (OR) value was depression level (8.84). CKD-HD patients with depression had an 8.84 times greater risk of experiencing a high symptom burden compared to CKD-HD patients who were not depressed after an HD sessions duration was controlled. Meanwhile, CKD-HD patients with  $> 4$  hours HD duration had a 5.27 times greater risk to experience a high symptom burden, compared to CKD-HD patients with 3-4 hours HD duration session which the depression level variable was already control.

**Table 3 Interaction Test Result**

Variable	$\beta$	S.E	Wald	OR (Exp $\beta$ )	95% CI	p-value
Duration of HD Session	1.663	0.640	6.753	5.275	1.51-18.49	0.009
Depression Level	2.180	0.629	12.002	8.846	2.57-30.36	0.001
Duration of HD Session by Depression Level	-	-	-	-	-	0.738
Constanta	-0.625	0.503	1.542	0.535		

**Table 4 Result of Logistic Regression Test**

Variable	$\beta$	S.E	Wald	OR (Exp $\beta$ )	95% CI	p-value
Duration of HD Session	1.663	0.640	6.753	5.275	1.51-18.49	0.009
Depression Level	2.180	0.629	12.002	8.846	2.57-30.36	0.001
Constanta	-0.625	0.503	1.542	0.535		

**Discussion**

The result of this study indicated that the majority of respondents (50.6%) were classified to have a high symptom burden ( $33.56 \pm 12.23$ ), with symptom burden score was  $21.21 \pm 15.68$  (data not attached). This result was found lower than the previous studies (Almutary et al., 2016; Karasneh et

al., 2020). Differences in symptom burden results with previous studies might be affected by varies type of symptom burden instrument used, cultural differences which affected the perception of symptoms, varies of dialysis technique practice, psychological condition, uremic condition, or less adequate dialysis (Almutary et al., 2016; Brennan, Siva, & Crail, 2013).

There was an association between younger age and symptom burden, in line with the result of studies by Caplin et al. (2011) and Song et al. (2018). However, this result was not corresponded to Almutary et al. (2016) study, which declared that the older age was related to symptom burden. Older patient may report a lower symptom burden because they had already at the stage of self-acceptance and its complications, and had learnt to live with those symptoms (Danquah et al., 2010; Orenstein & Lewis, 2020) and had a lower expectation in terms of quality of life (Caplin et al., 2011).

There was not any association between the HD session duration and symptom burden in bivariate analysis. This was in line with the result of study by Karasneh et al. (2020). However, based on the results of the multivariate analysis, the HD session duration was one of the factors associated with a high symptom burden ( $p= 0.009$ ). The possible reason why the association was finally found was because the symptom burden variable was split into a dichotomy as a requirement for the logistic regression test. In addition, this study only analysed a single of HD session duration but if the dose of HD time duration was adjusted based on the golden standard to achieve adequate HD, which was 3 times a week, 4-5 hours duration (Sukandar, 2006), the HD session duration were still inadequate (majority, HD frequency was 2 times a week, HD session duration was 3-4 hours). An inadequate HD may cause metabolic waste and symptoms increase due to uremia. This was in line with the results of study by Danquah et al. (2010) who stated that CKD-HD patients with a longer interdialytic interval (two days) reported higher symptom burden score than patients with one-day interdialytic interval.

The positive correlation between post-dialysis recovery time and symptom burden in this study was corresponded with several studies result (Caplin et al., 2011; Lopes et al., 2014; Rayner et al., 2014). The pathogenesis of a longer recovery time post-dialysis was probably due to an osmotic imbalance during the hemodialysis process that caused neurological symptoms (Rayner et al., 2014). Thus, dialysis nurses need to prevent hemodialysis-related complications

which contributed to longer recovery time that may risk a higher symptom burden.

There was not any association between gender, Hb level, nutritional status, physical activity, social support and symptom burden. In general, studies stated that female was associated with symptom burden (Almutary et al., 2016; Danquah et al., 2010; Caplin, Kumar, & Davenport, 2011, Karasneh et al., 2020). The possibility of a balanced gender composition between women and men (51.4% vs 50%) in the high symptom burden category in this study caused no association. Furthermore, the small difference in the range of Hb level data between symptom burden categories was probably the reason why there was no relationship between Hb levels and symptom burden. As far as we know, the result of this study was a novelty in analysing the absence of an association between nutritional status and symptom burden associated with CKD symptoms that had not been evaluated before. Previous studies had stated that there was a relationship between nutritional status and symptom burden related to gastrointestinal symptoms (Randall et al., 2019 and Silva et al., 2012). The type of symptom assessed was likely to be the reason why there was no association in this study. Furthermore, no association was found between physical activity and symptom burden, this was in line with the result of study by Sheshadri et al. (2019). The possible reason why there was no association between physical activity and symptom load was because 40% of respondents in this study still had very active physical activity. The absence of association between social support and symptom burden was consistent with the results of the study by Dano et al. (2018) and Gao et al. (2016). Good social support and the small differences in the range of social support data between categories of symptom burden were probably the reasons why there was no relation between social support and symptom burden.

There was a moderate strength association between the depression level and symptom burden. In the multivariate analysis, there were two variables that influenced high symptom burden, the HD session duration and depression level. However, depression level was the most dominant factor associated with

symptom burden. This was corresponded with the results of other studies which stated that the higher the level of depression, the higher the symptom burden (Son et al., 2009; Song et al., 2018; Wan Zukiman et al. 2017). In this study, the five highest symptoms that were present simultaneous in all symptom dimensions were fatigue, sleep disturbance, dry skin, muscle pain, bone or joint pain, and decreased interest in sex. Most of these physical symptoms were somatic symptoms related to psychological symptoms (fatigue, pain, pruritus, sleep disturbances and sexual dysfunction) (Shirazian et al., 2017). The assessment of depression in CKD-HD patients are complex, because physical and psychological interacted with each other, depressive symptoms present were overlapping with uremic symptoms (Shirazian et al., 2017).

Dialysis process was one of the stressors caused psychological problems, where the patient felt depressed, lacked of social support from the closest person, tired with the dialysis process, felt hopeless, anxious, had thoughts of loss, high awareness of death, and felt uncertain about the disease (Avdal et al., 2020; Cervantes et al., 2016). In addition, lifestyle changes, feeling overwhelmed by self-care, physical symptoms arising from uremia and medication were also associated with depression (Kustimah et al., 2020; Shirazian et al., 2017). The dialysis process and uremic conditions may activate an inflammatory response that results in the release of pro-inflammatory cytokines (Sukandar, 2006). Several studies have shown that levels of interleukin-6 was found higher in CKD-HD patients with depression (Bossola et al., 2015; Wang et al., 2012). Depression in CKD-HD may worsen CKD-related symptoms, affect the adherence to a treatment, increase the incidence of hospitalization, morbidity, malnutrition, and worsen the quality of life (Garcia-Llana et al., 2014; Treadwell, 2017).

This study implicated nursing practice in the hemodialysis unit as an effort to reduce symptom burden, which emphasizes the importance of giving attention to the patient psychological aspects. This psychological problem is often unrecognized because the somatic symptoms are similar to uremic symptoms and the low management (Chen,

Wang, & Lang, 2016). The initial effort that can be made in depression management is screening of depression. Dialysis nurses should receive training in the administering protocol of the depression screening questionnaire and how to triage patients who are positive for depression (Hedayati et al., 2012). The HD unit should establish policies regarding depression screening and algorithms for treating patients with depression. Regarding depression treatment, dialysis nurses need to involve doctors, psychologists or counsellors in a multidisciplinary team, and take courses on psychological interventions to improve depression level (Farrokhi, 2012). The non-pharmacological therapy proposed was cognitive behavioural therapy. Other alternative options proposed were exercise, anxiety treatment, conflict management, education for social life management, music therapy (Hedayati et al., 2012), and life reviews and cognitive therapy (Sutinah, 2020).

## Conclusion

It is concluded that high symptom burden in CKD-HD patients was strongly influenced by the depression level, which means that CKD-HD patients with depression are more at risk of experiencing a high symptom burden than those who are not depressed. Dialysis nurses need to give attention to psychological aspects and be able to distinguish between psychological and uremic symptoms. The high symptom burden can be reduced by improving depression levels in CKD-HD patients, by screening depression, providing mentoring, nursing education and interventions, or developing depression-related interventions.

The limitation of this study was the small number of samples involved, so that the relative results of this study cannot be generalized to a wider population. This study does not have information about HD adequacy among respondents, that may be source of residual confounder. Future studies may need to examine other factors (comorbidity, hemodialysis frequency per week, quantification of HD and IL-6 adequacy). Longitudinal design studies are

warranted to explore the symptom burden and depression at each stage of CKD and types of modalities and interventions to reduce the symptom burden associated with depression in CKD-HD patients.

## References

- Abrori, I., & Ahmad, R. A. (2018). Kualitas hidup penderita tuberkulosis resisten obat di kabupaten Banyumas. (Quality of life for drug resistant tuberculosis patients in Banyumas district). *Berita Kedokteran Masyarakat*, 34(2), 56–61.
- Almutary, H., Bonner, A., & Douglas, C. (2013). Review article symptom burden In chronic kidney disease: A review Of recent Literature. *Journal of Renal Care*, 1–11. <https://doi.org/doi:10.1111/j.1755-6686.2013.12022.x>
- Almutary, H., Bonner, A., & Douglas, C. (2015). Arabic translation , adaptation and modification of the dialysis symptom index for chronic kidney disease stages four and five. *BMC Nephrology*, 16(36), 1–8. <https://doi.org/10.1186/s12882-015-0036-2>
- Almutary, H., Bonner, A., & Douglas, C. (2016). Which patients with chronic kidney disease have the greatest symptom burden ? A comparative study of advanced CKD stage And Dialysis Modality. *Journal of Renal Care*, 42(2), 73–82. <https://doi.org/10.1111/jorc.12152>
- Avdal, E.U., Ayvaz, İ., Özgursoy Uran, B., Yildirim, J., Sofulu, F., & Pamuk, G. (2020). Opinions of hemodialysis and peritoneum patients regarding depression and psychological problems which they experience: A qualitative study. *Journal of Infection and Public Health*. <https://doi.org/10.1016/j.jiph.2020.02.041>
- Bossola, M., Di Stasio, E., Giungi, S., Rosa, F., & Tazza, L. (2015). Fatigue is associated with serum interleukin-6 levels and symptoms of depression in patients on chronic hemodialysis. *Journal of Pain and Symptom Management*, 49(3), 578–585. <https://doi.org/10.1016/j.jpainsymman.2014.07.009>
- Brennan, F., Siva, B., & Crail, S. (2013). Appropriate ssessment of symptom burden and provision of patient informatio. *Nephrology*, n/a-n/a. <https://doi.org/10.1111/nep.12075>
- Brislin, R. W. (1970). Back-Translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216. <https://doi.org/10.1177/135910457000100301>
- Caplin, B., Kumar, S., & Davenport, A. (2011). Patients' perspective of haemodialysis-associated symptoms. *Nephrology Dialysis Transplantation*, 26(8), 2656–2663. <https://doi.org/10.1093/ndt/gfq763>
- Cervantes, L., Hull, M., Keniston, A., Chonchol, M., Hasnain-Wynia, R., Fischer, S. (2018). Symptom Burden among Latino Patients with End-Stage Renal Disease and Access to Standard or Emergency-Only Hemodialysis. *Journal of Palliative Medicine*, XX(XX), 1–5. <https://doi.org/10.1089/jpm.2017.0663>
- Chen, S. F., Wang, I. J., & Lang, H. C. (2016). Risk of major depression in patients with chronic renal failure on different treatment modalities: A matched-cohort and population-based study in Taiwan. *Hemodialysis International*, 20(1), 98–105. <https://doi.org/10.1111/hdi.12334>
- Clarke, A. L., Young, H. M. L., Hull, K. L., Hudson, N., Burton, J. O., & Smith, A. C. (2015). Motivations and barriers to exercise in chronic kidney disease : a qualitative study. *Nephrol Dial Transplant*, 30(June), 1885–1892. <https://doi.org/10.1093/ndt/gfv208>
- Dano, S., Zhang, J., Towes, D., Ahmed, T., Novak, M., & Musci, I. (2018). *Social Support is associated with Symptom Burden*. Mukci Novak Kidney Health Education and Research Group.
- Danquah, F. V. N., Zimmerman, L., Diamond, P. M., Meiningner, J., & Bergstrom, N. (2010). Frequency, Severity, and Distress Of Dialysis-Related Symptoms Reported by Patients on Hemodialysis Continuing. *Nephrology*

- Nursing Journal*, 37(6), 627–640.
- Davison, S. N. & Jhangri, G. S. (2010). Impact of Pain and Symptom Burden on the Health-Related Quality of Life of Hemodialysis Patients. *Journal of Pain and Symptom Management*, 39(3), 477–485. <https://doi.org/10.1016/j.jpainsymman.2009.08.008>
- Delmas, P., Cohen, C., Loisele, M.-C., Antonini, M., Pasquier, J., & Burnier, M. (2017). Symptoms and quality of life from patients undergoing hemodialysis in Switzerland. *Clinical Nursing Studies*, 6(2), 63. <https://doi.org/10.5430/cns.v6n2p63>
- Desbiens, N. A., Mueller-rizner, N., Connors, A. F., Wenger, N. S., Lynn, J., & Investigators, S. (1999). The Symptom Burden of Seriously Ill Hospitalized Patients. *Journal of Pain and Symptom Management*, 17(4), 248–255. [https://doi.org/10.1016/s0885-3924\(98\)00149-3](https://doi.org/10.1016/s0885-3924(98)00149-3)
- Gao, Y., Zhou, Y., Guo, C. X., & Zhao, J. F. (2016). The relationship among hope, symptom distress, social support, coping style and monthly income in maintenance hemodialysis patients: A structural equation model. *International Journal of Clinical and Experimental Medicine*, 9(10), 19717–19724.
- Gapstur, R. L. (2007). Symptom Burden : A Concept Analysis and Implications for Oncology Nurses. *Oncology Nursing Forum*, 34(3), 673–681. <https://doi.org/10.1188/07.ONF.673-680>
- Farrokhi, F. (2012). Depression Among Dialysis Patients. *Iranian Journal of Kidney Diseases*, 6(6), 403–406.
- García-Llana, H., Remor, E., del Peso, G., & Selgas, R. (2014). The role of depression, anxiety, stress and adherence to treatment in dialysis patients' health-related quality of life: a systematic review of the literature. *Nefrologia*, 34(5), 637–657. <https://doi.org/10.3265/Nefrologia.pre2014.Jun.11959>
- Hedayati, S. S., Yalamanchili, V., & Finkelstein, F. O. (2012). A practical approach to the treatment of depression in patients with chronic kidney disease and end-stage renal disease. *Kidney International*, 81(3), 247–255. <https://doi.org/10.1038/jid.2014.371>
- Indonesian Renal Registry/IRR (2018). *11th Report of Indonesian Renal Registry*. Retrieved March 14, 2020, from <https://www.indonesianrenalregistry.org/data/IRR%202018.pdf>
- Kalantar-Zadeh, K., Kleiner, M., Dunne, E., Lee, G. H., & Luft, F. C. (1999). A modified quantitative subjective global assessment of nutrition for dialysis patients. *Nephrology Dialysis Transplantation*, 14(7), 1732–1738. <https://doi.org/10.1093/ndt/14.7.1732>
- Karasneh, R., Al, S., Shoroq, A., Osama, M. A., & Sahar, Y. A. (2020). Predictors of symptom burden among hemodialysis patients: a cross sectional study at 13 hospitals. *International Urology and Nephrology*. <https://doi.org/10.1007/s11255-020-02458-2>
- Kementrian Kesehatan RI. (2016). *Pedoman Kegiatan Keafiatan di Tempat Kerja "Wellness Program at Workplace"*. Retrieved March 14, 2020, from <https://dokumen.tech/document/pedoman-kegiatan-keafiatan-di-tempat-kerja-staffuic-nutritional-management.html>.
- Kopple, J. ., Kim, J. ., Shapiro, B. ., Zhang, M., Li, Y., Porszasz, J., ... Kalantar-Zadeh, K. (2015). Factors affecting daily physical activity and physical performance in maintenance dialysis patients. *J Ren Nutr.*, 25(2), 217–222. <https://doi.org/10.1053/j.jrn.2014.10.017>
- Kroenke, K., Spitzer, R. L., Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9): 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Kustimah, K., Prathama Siswadi, A. G., Djunaidi, A., & Iskandarsyah, A. (2020). Quality of Life among Patients Undergoing Haemodialysis in Bandung: A mixed methods study. *Jurnal Keperawatan Padjadjaran*, 8(1). <https://doi.org/10.24198/jkp.v8i1.1330>

- Lenz, E. R., Pugh, L. C., Milligan, R. A., Gift, A., & Suppe, F. (1997). Theory unpleasant symptoms. *Adv Nurs Sci*. <https://doi.org/10.1097/00012272-199703000-00003>
- Li, H., Xie, L., Yang, J., & Pang, X. (2018). Symptom burden amongst patients suffering from end-stage renal disease and receiving dialysis : A literature review. *International Journal of Nursing Sciences*, 5(4), 427–431. <https://doi.org/10.1016/j.ijnss.2018.09.010>
- Linden, A. Van Der. (2019). *Cross-cultural validation of the Patient Health Questionnaire (PHQ-9) in Bahasa Indonesia to measure depression among people affected by leprosy in Central Java* [Master's thesis, Vrije Universteit]. Vrije Universteit, Amsterdam.
- Lindsay, R. M., Heidenheim, P. A., Nesrallah, G., & Garg, A. X. (2006). Minutes to recovery after a hemodialysis session : A simple health-related quality of life question that is reliable , Valid , and Sensitive to Change, 952–959. <https://doi.org/10.2215/CJN.00040106>
- Lopes, G. B., Silva, L. F., Pinto, G. B., Catto, L. F., Martins, M. T., Dutra, M. M., & Lopes, A. A. (2014). Patient's response to a simple question on recovery after hemodialysis session strongly associated with scores of comprehensive tools for quality of life and depression symptoms. *Quality of life research : an international journal of quality of life aspects of treatment, care and rehabilitation*, 23(8), 2247–2256. <https://doi.org/10.1007/s11136-014-0666-z>
- Lowney, A. C., Myles, H. T., Bristowe, K., Lowney, E. L., Shepherd, K., Murphy, M., ... Murtagh, F. E. M. (2015). Understanding what influences the health-related quality of life of hemodialysis patients : A collaborative study in England and Ireland. *Journal of Pain and Symptom Management*, 50(6), 778–785. <https://doi.org/10.1016/j.jpainsymman.2015.07.010>
- Ng, M. S. N., So, W. K. W., Wong, C. L., Hui, Y. H., Ho, E. H. S., Choi, K. C., ... Miaskowski, C. (2020). Stability and impact of symptom Clusters in Patients with end-stage renal disease undergoing dialysis. *Journal of Pain and Symptom Management*, 59(1), 67–76. <https://doi.org/10.1016/j.jpainsymman.2019.08.013>
- Nur, E. I. Y. (2017). *Validitas Dialysis Malnutrition Score (DMS) dan Nutritional Risk Index (NRI) Dibandingkan Dengan Subjective Global Assessment (SGA) Pada Pasien Gagal Ginjal yang Menjalani Hemodialisis*. [Master's thesis, Universitas Sebelas Maret]. Universitas Sebelas Maret, Surakarta, Indonesia.
- Orenstein, G. A., & Lewis, L. (2020). *Eriksons Stages of Psychosocial Development*. In StatPearls. StatPearls Publishing.
- PERNEFRI (Perhimpunan Nefrologi Indonesia) (2018). *Konsensus Anemia pada Penyakit Ginjal Kronik Edisi II*. (Consensus Anemia in Chronic Kidney Disease II Edition). PERNEFRI.
- Polit, D.F. & Beck, C.T. (2004). *Nursing Research Principles and Methods*. 7th ed. Philadelphia: Lippincott Williams & Wilkins.
- Randall, A. M., Stevenson, J., Heaney, S., Notaras, S., Hoffman, A., Choi, P., ... Sud, K. (2019). Sun-102 Nutrition-Impact Symptom Burden in Patients Attending Renal Supportive Care. *Kidney International Reports*, 4(7), S199. <https://doi.org/10.1016/j.ekir.2019.05.499>
- Rayner, H. C., Zepel, L., Fuller, D. S., Morgenstern, H., Karaboyas, A., Culleton, B. F., ... Robinson, B. M. (2014). Recovery Time, Quality of Life, and Mortality in Hemodialysis Patients: The Dialysis Outcomes and Practice Patterns Study (DOPPS). *American Journal of Kidney Diseases*, 1–9. <https://doi.org/10.1053/j.ajkd.2014.01.014>
- Sexton, D. J., Lowney, A. C., Seaghdha, C. M. O., Murphy, M., Brien, T. O., Casserly, L. F., ... Conlon, P. J. (2016). Do patient-reported measures of symptoms and health status predict mortality in hemodialysis ? An assessment of POS-S Renal and EQ-5D. *Hemodialysis International* 2016;, 1–13. <https://doi.org/10.1111/hdi.12415>
- Sherbourne, C. D., & Stewart, A. L. (1991).

- The MOS social support survey. *Social Science and Medicine*, 32(6), 705–714. [https://doi.org/10.1016/0277-9536\(91\)90150-B](https://doi.org/10.1016/0277-9536(91)90150-B)
- Sheshadri, A., Kittiskulnam, P., & Johansen, K. L. (2019). Higher physical activity is associated with less fatigue and insomnia among patients on hemodialysis. *Kidney International Reports*, 4(2), 285–292. <https://doi.org/10.1016/j.ekir.2018.10.014>
- Shirazian, S., Grant, C. D., Aina, O., Mattana, J., & Khorassani, F. (2017). Depression in Chronic Kidney Disease and End-Stage Renal Disease: Similarities and Differences in Diagnosis, Epidemiology, and Management. *Kidney International Reports*, 2(1), 94–107. <https://doi.org/10.1016/j.ekir.2016.09.005>
- Silva, L. F., Lopes, G. B., Matos, C. M., Brito, K. Q., Amoedo, M. K., Azevedo, M. F., ... Lopes, A. A. (2012). Gastrointestinal Symptoms and Nutritional Status in Women and Men on Maintenance Hemodialysis. *Journal of Renal Nutrition*, 22(3), 327–335. <https://doi.org/10.1053/j.jrn.2011.07.007>
- Son, Y.-J., Choi, K.-S., Park, Y.-R., Bae, J.-S., & Lee, J.-B. (2009). Depression, Symptoms and the Quality of Life in Patients on Hemodialysis for End-Stage Renal Disease. *American Journal of Nephrology*, 29(1), 36–42. <https://doi.org/10.1159/000150599>
- Song, M. K., Paul, S., Ward, S. E., Gilet, C. A., & Hladik, G. A. (2018). One-Year Linear Trajectories of Symptoms, Physical Functioning, Cognitive Functioning, Emotional Well-being, and Spiritual Well-being Among Patients Receiving Dialysis. *American Journal of Kidney Diseases*, 72(2), 198–204. <https://doi.org/10.1053/j.ajkd.2017.11.016>
- Sugiyono. (2018). *Metode Penelitian Kuantitatif. (Quantitative Research Methods)*. Alfabeta.
- Sukandar, E. (2006). *Gagal Ginjal dan Panduan Terapi Dialisis Tahun 2006. (Renal Failure and Dialysis Therapy Guide*, 2006.) Pusat Informasi Ilmiah (PPI) Bagian Ilmu Penyakit Dalam Fakultas Kedokteran UNPAD/RS. Dr. Hasan Sadikin.
- Sutinah (2020). Effect of Life Review and Cognitive Therapy on Depression in Patients with Chronic Renal Failure. *Jurnal Keperawatan Padjadjaran*, 8(2), 1–8. <https://doi.org/10.24198/jkp.v8i2.1342>
- Topolski, T. D., LoGerfo, J., Patrick, D. L., Williams, B., Walwick, J., & Patrick, M. B. (2006). The Rapid Assessment of Physical Activity (RAPA) among older adults. *Preventing Chronic Disease*, 3(4), 1–8.
- Treadwell, A. A. (2017). Examining Depression in Patients on Dialysis. *American Nephrology Nurses Association.*, 44(4), 295–307.
- USRDS (2018). *United States Renal Data System Annual Report: Executive Summary*. Retrieved March 14, 2020, from [https://www.usrds.org/2018/download/v1\\_00\\_ExecSummary\\_18.pdf](https://www.usrds.org/2018/download/v1_00_ExecSummary_18.pdf).
- Wan Zukiman, W. Z. H., Yaakup, H., Zakaria, N. F., & Shah, S. A. Bin. (2017). Symptom Prevalence and the Negative Emotional States in End-Stage Renal Disease Patients with or without Renal Replacement Therapy: A Cross-Sectional Analysis. *Journal of Palliative Medicine*, 20(10), 1127–1134. <https://doi.org/10.1089/jpm.2016.0450>
- Wang, L. J., Wu, M. S., Hsu, H. J., Wu, I. W., Sun, C. Y., Chou, C. C., ... Chen, C. K. (2012). The relationship between psychological factors, inflammation, and nutrition in patients with chronic renal failure undergoing hemodialysis. *International Journal of Psychiatry in Medicine*, 44(2), 105–118. <https://doi.org/10.2190/PM.44.2.b>
- Yu, I., Huang, J., & Tsai, Y. (2012). Symptom cluster among hemodialysis patients in Taiwan. *Applied Nursing Research*, 25(3), 190–196. <https://doi.org/10.1016/j.apnr.2010.11.002>.

## **Effectiveness Blended Learning in Reducing HIV-related Stigma and Discrimination among Nurses: A Queasy Experimental Design**

**Heni Purnama<sup>1</sup>, Nyayu Nina Putri Calisanie<sup>1</sup>, Linlin Lindayani<sup>1</sup>, Taryudi Taryudi<sup>2</sup>**  
<sup>1</sup>West Java Indonesian Nurses Association's School of Health Science, Bandung, Indonesia  
<sup>2</sup>Universitas Negeri Jakarta, Tangerang, Indonesia  
*Corresponding Email: linlinlindayani@gmail.com*

Submitted: 10-09-2020 Accepted: 05-11-2020 Published: 01-12-2020

### **Abstract**

Scale-up of stigma-reduction programs in healthcare settings has been slow in part due to lack of understanding and social norm associated with pre-existing stigma in HIV population. The application of blended learning can bridge the gap between theory and practice and make the learning experience more meaningful so that it can be applied as a way of learning to reduce stigma against PLWHA from healthcare professional. The aimed of this study was to determine the effectiveness of blended learning in reducing the stigma of nurses toward people with HIV/AIDS (PLWHA). This study used a quasi-experimental pre-post-test design with two groups (the intervention group and the control group). The samples in this study were nurses who worked at the public health center in Bandung. HIV-related stigma and discrimination (S&D) questionnaire was used to measure HIV-related stigma among nurses. Mean, standard deviation, frequency was used to explain demographic data and main variables. In the intervention (blended learning) group, there was a significant different of the mean score of HIV-related S&D before and after blended learning intervention with  $\Delta$  mean was 4.37 and ( $p = 0.001$ ). In the control group, there was no significant different of those  $\Delta$  mean was 3.39 ( $p=0.459$ ). A significant difference found in the post test mean score of HIV-related stigma and discrimination between intervention and control group [ $F=569.018$ , ( $p= 0.000$ )]. This study found that blended learning could reduce the HIV-related stigma and discrimination from nurses. This underscores the utility of this intervention to change the perceived of stigma and discrimination of health workers, as well as potential to generalize or adapt this intervention to other settings in the region and beyond.

**Keywords:** Blended learning, discrimination, HIV-related stigma, intervention, nurses.

## Introduction

The total cases of HIV/AIDS in Indonesia as of June 2018 were 301,959 people and most commonly found in the productive age group, which is spread over 433 (84.2%) of 514 districts or cities in 34 provinces (Rahmati-Najarkolaei et al., 2010). A previous study revealed that most of the PLWHA were aged between 20-29 years old (66.2%), and 79.2% of them are still working (Ibrahim et al. 2017). The challenge in combating HIV/AIDS is reducing the stigma and discrimination experienced by people living with HIV/AIDS (PLWHA). The facts show that due to this problem, PLWHA has kept the HIV status hidden from family members for many years (Yiu et al., 2010). This condition potentially causes PLWHA to not get access to optimal health, services and treatment, thereby increasing the risk of complications from the disease they suffer (Rahmati-Najarkolaei et al., 2010; Lindayani & Maryam, 2017). PLWHA experiences stigma when first diagnosed because it is related to a lack of knowledge about their disease, this status will last for 6 months and increase for 15 years (Kurien et al., 2007).

Stigma is multidimensional constructs and reinforced by social disparity, thus deeply discrediting people and reducing their status in society (Erving Goffman, 1963). Stigma is when someone sees you in negative ways, while discrimination is someone treats you in negative ways (Kinsler et al., 2007). The prevalence of stigma against PLWHA by health workers was reported to be quite high at 15.4% (Dlamini et al., 2009). This stigma occurs in the form of not receiving health services because of their status, movement from one officer to another, not getting proper care, being mistreated by nurses or other health workers (Banteyeriga et al., 2005). Scale-up of stigma-reduction programs in healthcare settings has been slow in part due to lack of understanding and social norms associated with pre-existing stigma in HIV population. As HIV is closely associated with pre-existing stigmatized groups, such as homosexuals, injecting drug users, and commercial sex workers, which have always been taboo topics among Indonesians, it is not surprising that all this has led to stigmatizing the

disease all the more (Lindayani et al, 2017). Various attempts have been made to reduce stigma, namely HIV services, provision of information about HIV, education and counseling (Yiu et al., 2010). However, due to unequal understanding of HIV/AIDS, the stigma rate remains high. Perceptions of irrational fear of HIV transmission are a factor in the emergence of stigma among health workers in Indonesia (Feyissa et al., 2012).

The training obtained by health workers and good knowledge does not have a direct effect on the stigma of health workers towards PLWHA (Musheke et al., 2013). This may be due to the majority of previous training was lack of theoretical guideline for behavior change and may be boring due to conventional methods. Although this technique is well received and has demonstrated promising results, time and the capacity to scale up time-intensive projects are two main challenges in a busy health delivery system. Ideally, all workers in a facility will undergo in-person, participatory stigma-reduction training addressing all the primary drivers of stigma as a common practice, from workers to medical professionals. In fact, most health facilities will struggle to find the time to give all their workers this form of training. The results of this study indicate that a specific strategy is needed based on social cognitive theory by combining interpersonal interactions and interventions to achieve behavior change in reducing stigma against PLWHA (UNAIDS, 2016).

Blended learning is an effective learning method by combining various combinations of teaching methods, methods and models (Manganye et al., 2013). Previous study indicated that through blended learning, participants were able to have flexible time, not boring due to not standing by whole day in room, and able to change to operate available information technology (Manganye et al., 2013). The study reported a positive response and satisfaction from the application of blended learning that was felt by both teachers and subjects (Nyblade et al., 2009; Sweeney & Vanable, 2016). The application of the blended-learning method has been shown to significantly influence behavior change (Li et al., 2013; Steward et al., 2013).

The application of blended learning can bridge the gap between theory and practice and make the learning experience more meaningful so that it can be applied as a way of learning to reduce stigma against PLWHA

(Nyblade et al., 2009). Therefore, this study aimed to determine the effectiveness of blended learning in reducing the stigma of health workers in people with HIV/AIDS (PLWHA).

### Conceptual framework

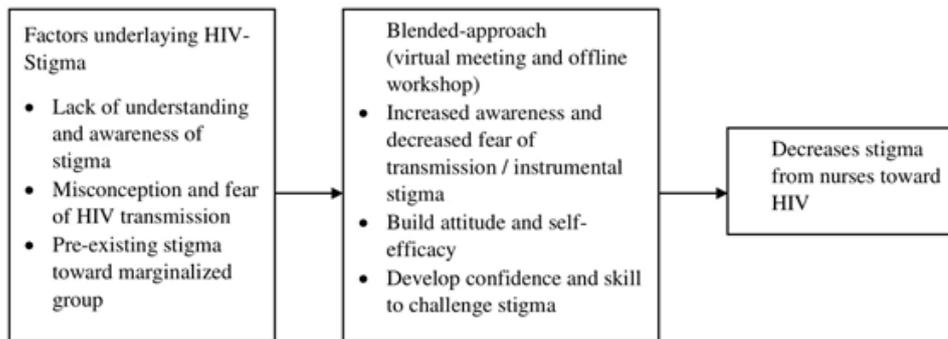


Figure 1 Conceptual Framework

The intervention used in this study refers to a behavior change strategy. Behavior change strategies are based on the principles of social cognitive theory which emphasize the importance of combining interpersonal interactions with specific strategies that promote behavior change (Bandura & Walters, 1977). This can include the establishment of safe spaces for contact between stigmatized and stigmatized offenders (contact strategies) who seek to break down discrepancies and promote empathy (Nyblade et al, 2018). It may also involve observational learning and the function of feedback to encourage self-efficacy. This method includes observational learning and role-playing with feedback to increase self-efficacy (Nyblade et al, 2018). Thus, such activities as computer-based self-testing, skills training for interacting with PLHIV, interactive games, and presentations by people living with HIV are designed to educate, promote learning, reduce distance and “us vs. them,” create empathy and build self-efficacy. These strategies are then used to develop activities to address fears and misconceptions around HIV transmission (e.g., “instrumental stigma”); negative attitudes towards people living with HIV and marginalized groups vulnerable to HIV infection (e.g., “symbolic stigma”); and a lack of awareness of stigma and its effects

(Nyblade et al, 2018).

### Method

This study used a quasi-experimental pre-post-test design with two groups (the intervention group and the control group) which aimed to determine the effectiveness of blended learning in reducing the stigma of health workers in people with HIV/AIDS (PLWHA). This study was approved by ethical committee of affiliated university (III/012/KEPK/STIKep/PPNI/Jabar/2020) prior to data collection.

The intervention has been conducted for 3 months, including 1-month preparation stage (phase I and II) and two months intervention. Participant in intervention group received eight-week workshop session consisting virtual workshop and offline workshop. Each week has different learning objective lead by HIV expert including nurse practitioners and academicians. Control group were only receiving an information related to new evidence in HIV prevention and treatment through leaflet.

The intervention was consisting of 3 phases. Phase 1: researchers tried to identify readiness and understanding and service schedule, review of existing training modules,

and identify existing content to be adopted in the module. Module is consisting of general information and new evidence regarding HIV and stigma reduction program that focus on concretely learn what stigma is and what its consequences are (i.e., how stigma fuels the HIV epidemic). The content of module was validated using a content analysis reviewed by 5 experts using a standard form (consist of content each chapter) to check each content appropriateness, relevancy, accuracy and readability. Phase II: develop scripts for each training session with input from health behaviors, 2 nurse practitioners in infection control, 2 nursing academicians that have

more than 2 publication in HIV-related stigma review, 1 PLWH. They were asked to review the scrip and revise training scenarios, creating visual content from the drafted scenario: site identification, filming, editing, and visual education production. Phase III: pilot testing: test content and data for each intervention session; pilot testing is carried out on nursing students, and revision and finalization of intervention protocols. Pilot training has been performed for two months (8-week workshop session, once a week), and each session has been set up for 60 minutes. Below is a chart of the intervention flow (Figure 2).

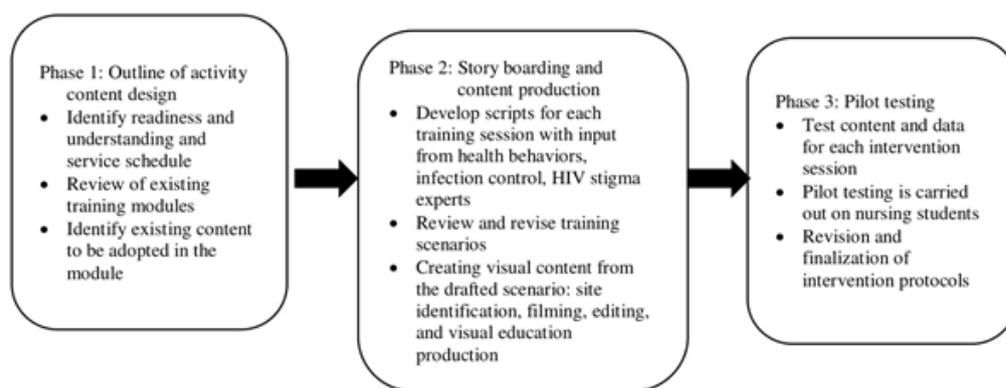


Figure 2 Intervention procedures adopted from Nyblade et al. (2018)

From this pilot testing, we developed a final protocol of this study. Each week consisted of:

1. First-second week virtual workshop (sensitivity and fear of transmission / instrumental stigma): emphasis on finding and resolving information gaps in HIV transmission, on how to mitigate specific risk when providing services (standard precautions) and on recognizing the value of systematic implementation of standard precautions. This session focuses on answering specific concerns that participants may have about casual contact with HIV-positive patients, as well as more general myths and assumptions about HIV transmission and linkages, and acknowledges that health workers face real risks of HIV transmission in the course of their work, e.g., from needle sticks.
2. Third-fifth week offline workshop

(Attitudes (Symbolic Stigma): Activities aimed at helping trainees understand stigmatizing attitudes and how they can affect the level of care given, often in unrecognized ways. Such behaviors can be conveyed, for example, through verbal and body language, by embarrassment, remorse, and judgment, as well as through other discriminatory practices such as making such patients wait to be seen last, even though they have arrived earlier than others.

3. Six-eight week offline and online workshop (recognition and internalization): Emphasis on video of stigma faced by a person living with HIV in a household environment, self-reflection exercise asking participants to recognize and consider a time in their lives, three video testimonials of people living with HIV with self-reflection questions to create empathy and minimize blame.

The populations in this study were all

nurses who worked at 5 public health centers in Bandung with approximately around 125 nurses in total excluding those who take leave for any reason. Health services for PLHIV in Bandung City refer to the One Stop Service system where patients get access to integrated health services at the same location and time at health care facilities.

The inclusion criteria in this study were: all health workers who were willing to participate in the research. The sample technique used is convenience sampling. The number of samples was calculated using G-Power Software Version 3.1.6 assuming the t test,  $\alpha = 0.05$ , effect size = 0.60, power level = 0.80. To anticipated drop out, we add 30% of sample from total estimation. So that the total samples to be recruited 94. In final data collection, there were 100 participants joined in this study.

HIV-related stigma and discrimination (S&D) questionnaire was used to measure HIV-related stigma from healthcare professionals. This questionnaire was deliberately designed to capture immediately stigma drivers and enacted stigma. Eighteen core questions measure three programmatically actionable drivers of stigma within health facilities (worry about HIV transmission, attitudes towards people living with HIV (PLHIV), and health facility environment, including policies), and enacted stigma. This instrument consists of 3 options (0 = disagree/do not known, 1 = agree) for health facility policies and work environment, and two options (worried/not worried) for worry related to contracting HIV when caring or providing services to people living with HIV. Then for option about people living with HIV and observed stigma, infection precaution measure, and experience

of secondary stigma, the answer consists of 0 = disagree / do not known, 1 = agree). The questionnaire also includes one short scale for attitudes towards PLHIV (5-item scale,  $\alpha = 0.78$ ). Permission to use the instrument was obtained from Health Policy Project, USA and it's free to use. This instrument has been translated into Indonesian using forward translation by one people from major health background have knowledgeable of English-speaking culture but his/her mother tongue should be the primary language of the target culture and backward translation by an independent translator, whose mother tongue is English and have no knowledge about questionnaire. The item-correlations was check using person correlation with the r value ranged from 0.45 to 0.61, while cronbach Alpha in the current study was 0.798.

We conducted a test of normal duration distribution. The results or normality testing showed that data was normally distributed based on the no significant Kolmogorov–Smirnov test, Mean, standard deviation, and frequency was used to explain demographic data and main variables. Differences in baseline characteristics between the intervention and control groups will be tested using an independent t-test. The difference in results between the two groups after intervention, we will use the ANCOVA test. The data will be analyzed using SPSS version 22 for windows. A significance level of 5% will be used for comparisons between intervention and control group.

## Results

**Table 1 Demographic characteristic of studied participants**

Characteristics	Intervention Group n=50, (%)	Control group n=50, (%)	p-value
Age in year (Mean ± SD)	24.95 ± 9.37	25.26 ± 9.04	0.077a
Gender			
Male	9 (18)	11 (22)	0.179b
Female	41 (82)	39 (78)	
Marital Status			
Married	30 (60)	35 (70)	0.089b
Single	20 (40)	15 (30)	
Working status			

Permanent	38 (76)	40 (80)	0.674 <sup>b</sup>
Temporary /Contract	12 (24)	10 (20)	
Working experience	4.95 ± 1.37	5.26 ± 1.04	0.372 <sup>a</sup>
Ever received HIV training			
Yes	12 (24)	14 (28)	0.456 <sup>b</sup>
No	38 (76)	36 (72)	

Note: <sup>a</sup>independent t test, <sup>b</sup>Chi square.

**Table 2 HIV-related stigma and discrimination (S&D) before and after intervention in the blended learning group (n=50)**

	Pre-test		Post-test		Δ	t	p-value
	Mean	SD	Mean	SD	Mean		
HIV-related S& D	24.49	6.65	20.12	3.34	4.37	10.19	0.001
Drivers (18 items)	16.44	3.53	12.85	2.84	3.59	7.95	0.001
Enact Stigma (9 items)	6.98	2.34	4.15	1.61	2.84	6.87	0.001

**Table 3 HIV-related stigma and discrimination (S&D) before and after intervention in the control group (n=50)**

	Pre-test		Post-test		Δ	t	p-value
	Mean	SD	Mean	SD	Mean		
HIV-related S& D	20.49	6.65	19.12	7.34	1.37	3.99	0.459
Drivers	13.44	3.53	11.85	2.84	1.59	1.59	0.438
Enact Stigma	4.15	1.34	4.11	1.61	0.04	1.13	0.677

**Table 4 Differences of HIV-related stigma and discrimination between two groups (n=100)**

Source	Type III sum of square	Df	Mean Square	F	p-value
Corrected model	1321.02	2	412.013	170.021	0.000
Intercept	1512.020	1	1512.020	470.081	0.000
Pre-test	219.027	1	219.027	70.075	0.000
Group	1830.102	1	1830.102	569.018	0.000
Error	7200.12	167	5.139		
Total	111199.001	170			
Corrected total	2822.291	168			

Of 100 participants joined in this study, 50 in the intervention group and 50 in control group. The majority of respondents were female (82% in intervention group and 78% in control group), married (60%), permanent worker (76%). The average age of respondents in the intervention group is 24.95+9.37 years. The average age of respondents in the control group was 25.26 +9.04 years. The mean of working experience was There were 4.95 (SD= 1.37) in intervention group and 5.26 (SD= 1.04) in the control group. There were no significant differences of age distribution, gender, marital status, working status, working experience, and ever received HIV training between intervention and control groups ( $p > 0.05$ ) (Table 1).

Table 2 shows HIV-related stigma and discrimination (S&D) before and after intervention in the blended learning group. There was a significant different of the mean score of HIV-related S&D before and after blended learning intervention in the intervention group ( $\Delta$  mean 4.37 and  $p = 0.001$ ). In addition, the driver's stigma and enact stigma also decreased after intervention ( $\Delta$  mean =3.59;  $p = 0.001$ , and 2.84,  $p = 0.001$ , respectively).

Table 3 shows HIV-related stigma and discrimination (S&D) before and after intervention in the control group. There was no significant different of the mean score of HIV-related S& before and after blended learning intervention with  $\Delta$  mean was 3.39 and  $p$ -value was 0.459. In addition, driver's stigma and enact stigma was no decreased with  $\Delta$  mean was 1.59 and 1.13, respectively ( $p$ -value  $> 0.05$ ).

ANCOVA result in Table 4 reveals that there was a significant difference in the mean score of post-test HIV-related stigma and discrimination between blended learning group and control group [ $F = 569.018$ ,  $p$ -value ( $0.000 < 0.05$ )]. The null hypothesis is therefore rejected. This implies that between blended learning is significantly more effective than discussion method in improving HIV-related stigma and discrimination.

## Discussion

This study found that blended learning

could reduce the HIV-related stigma and discrimination from nurses. Previous research conducted in America tried to develop blended learning using a mobile-App that adopted the principles of social cognitive theory Bandura & Walters (1977) which emphasized the importance of combining interpersonal interactions with specific strategies that encourage behavior change. This can include creating safe spaces for contact between stigmatized and stigmatized actors (contact strategies), which serve to break down differences and cultivate empathy (Chan & Tsai, 2017; Pettigrew & Tropp, 2006; Batson et al., 2003; McKeever, 2015). In this study, blended-learning approach was specifically designed to address the busy time constraints of healthcare professionals, it is noteworthy that scheduling and time availability remained a challenge for ward staff working in the hospital even at three relatively brief sessions. These strategies are then used to develop activities to address key actionable drivers of stigma: fear and misconceptions surrounding HIV transmission (i.e., "instrumental stigma"); negative attitudes toward people living with HIV and marginalized groups who are vulnerable to HIV infection (i.e., "symbolic stigma") and a lack of awareness of stigma and its impacts. Future study using rigor method is needed to confirm this finding.

The importance of solving HIV stigma in health care facilities in order to improve quality of care and patient achievement is well recorded and accepted (Pisal et al., 2007; Yiu et al., 2010). What is less well understood is how to effectively reduce that stigma for participation in training or other learning activities within the confines of an extremely busy health delivery system and limited staff time at the health facility. The study-designed three-session intervention offers a possible solution to this challenge, combining two self-directed, tablet-administered learning sessions with one in-person group session. While it will be sometime before the trial is finished and the results are known, feedback from the experience of early implementation suggests such an approach is feasible and well received by nurses. Most participants took part in the sessions and gave constructive reactions through statement on the training

and learning process. Since there was a time gap between completing the tablet sessions and group sessions, the intervention coordinator noted that several participants told the facilitators that when the videos were completed (tablet sessions), they changed their behavior towards clients living with HIV because “they removed that fear from our mind.”

Most crucial is the lesson that people with lived HIV and stigma experience must be central to designing and delivering HIV-stigma reduction treatments. People living with HIV provided input into the development of the script and took part in the videos depicting the roles of people living with HIV. The in-person group session is about having a person living with HIV present to share experiences with participants and interact with them. Experience to date indicates this is the most important single interaction for participants in the intervention. Typically, it's the first time they interact with an openly positive person living with HIV outside of a health facility or patient / provider environment. As has been shown in reducing mental health stigma, contact between stigmatization and stigmatization is central to effective reduction of stigma (Corrigan et al., 2012). It should also be mentioned that since the contents for this intervention were designed, the mHealth sector has made significant progress. Hence, the range of options provided by HIV-Stigma Reduction for Health-Facility staff providing the self-directed learning component is increasing rapidly. For example, the intervention's tablet session could now be delivered on a smartphone, tablet device or in the ward via a computer terminal with cloud access to content or a learning management system.

Overall, the approach does have some limitations. This curriculum is established to identify individual level of stigma but included institution level. It will be important to intervene at both this individual and broader institutional level to create sustainable change across a health care system. This study conducted using queasy experimental without control group which not counted the true effect of the program. Second, the sample size was smaller that would be resulting less sensitivity to detect power or magnitude for

the effect of the program. Third, we select a sample using convenience sampling that would introduce selection bias.

## Conclusion

This study found that blended learning could reduce the HIV-related stigma and discrimination from nurses. This underscores the utility of this intervention to change the perceived of stigma and discrimination of health workers, as well as potential to generalize or adapt this intervention to other settings in the region and beyond. Future study using rigor method is needed to confirm this finding.

## References

Bandura, A. (1994). Social cognitive theory and exercise of control over HIV infection. *In Preventing AIDS*, pp. 25–59.

Bandura, A., & Walters, R. H. (1977). *Social learning theory (Vol. 1)*. Prentice-hall Englewood Cliffs.

Banteyerga, H., Kidanu, A., Abebe, F., Alemayehu, M., Fiseha, B., Asazenew, A., Ruden, C., Asfaw, Y., & Shibru, A. (2005). Perceived stigmatization and discrimination by health care providers toward persons with HIV/AIDS. *Miz-Hasab Research Center; Addis Ababa, IntraHealth International*. <http://dx.doi.org/10.13140/2.1.3556.7687>

Batson, C. D., Lishner, D. A., Carpenter, A., Dulin, L., Harjusola-Webb, S., Stocks, E. L., Gale, S., Hassan, O., & Sampat, B. (2003). “As you would have them do unto you”: Does imagining yourself in the other's place stimulate moral action?, *Personality and Social Psychology Bulletin*, 29(9), 1190–1201. <https://doi.org/10.1177/0146167203254600>

Chan, B. T., & Tsai, A. C. (2017). Personal contact with HIV-positive persons is associated with reduced HIV-related stigma: Cross-sectional analysis of general population surveys from 26 countries in sub-Saharan Africa. *Journal of the International*

- AIDS Society*, 20 (1), 1–8. <https://dx.doi.org/10.7448%2FIAS.20.1.21395>
- Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsçh, N. (2012). Challenging the public stigma of mental illness: a meta-analysis of outcome studies. *Psychiatric Services*, 63(10), 963–973. <https://doi.org/10.1176/appi.ps.201100529>
- Dlamini, P. S., Wantland, D., Makoe, L. N., Chirwa, M., Kohi, T. W., Greeff, M., Naidoo, J., Mullan, J., Uys, L. R., & Holzemer, W. L. (2009). HIV stigma and missed medications in HIV-positive people in five African countries. *AIDS Patient Care and STDs*, 23(5), 377–387. <https://dx.doi.org/10.1089%2Fapc.2008.0164>
- Erving Goffman, S. (1963). Notes on the management of spoiled identity. Englewood Cliffs, NJ: Prentice-Hall.
- Ezedinachi, E. N. U., Ross, M. W., Meremiku, M., Essien, E. J., Edem, C. B., Ekure, E., & Ita, O. (2002). The impact of an intervention to change health workers' HIV/AIDS attitudes and knowledge in Nigeria: a controlled trial. *Public Health*, 116(2), 106–112.
- Feyissa, G. T., Abebe, L., Girma, E., & Woldie, M. (2012). Stigma and discrimination against people living with HIV by healthcare providers, Southwest Ethiopia. *BMC Public Health*, 12(1), 522. <https://doi.org/10.1186/1471-2458-12-522>
- Kinsler, J. J., Wong, M. D., Sayles, J. N., Davis, C., & Cunningham, W. E. (2007). The effect of perceived stigma from a health care provider on access to care among a low-income HIV-positive population. *AIDS Patient Care and STDs*, 21(8), 584–592. <https://doi.org/10.1089/apc.2006.0202>
- Kurien, M., Thomas, K., Ahuja, R. C., Patel, A., Shyla, P. R., Wig, N., Mangalani, M., Kasthuri, A., Vyas, B., & Brogen, A. (2007). Screening for HIV infection by health professionals in India. *The National Medical Journal of India*, 20(2), 59–66.
- Li, L., Wu, Z., Liang, L.-J., Lin, C., Guan, J., Jia, M., Rou, K., & Yan, Z. (2013). Reducing HIV-related stigma in health care settings: a randomized controlled trial in China. *American Journal of Public Health*, 103(2), 286–292. <https://dx.doi.org/10.2105%2FAJPH.2012.300854>
- Lindayani, L and Maryam, N.N.A. (2017). Tinjauan sistematis: Efektifitas palliative home care untuk pasien dengan HIV/AIDS. (Systematic review: The effectiveness of alliative home care for patients with HIV / AIDS). *Jurnal Keperawatan Padjadjaran*, 5 (1), 29-36. <https://doi.org/10.24198/jkp.v5i1.347>
- Lindayani, L., Ibrahim, K., Wang, J.-D., & Ko, N.-Y. (2017). Independent and synergistic effects of self- and public stigmas on quality of life of HIV-infected persons. *AIDS Care*, 30(6), 706–713. <https://doi.org/10.1080/09540121.2017.1396282>
- Manganye, B. S., Maluleke, T. X., & Lebeso, R. T. (2013). Professional nurses' views regarding stigma and discrimination in the care of HIV and AIDS patients in rural hospitals of the Limpopo province, South Africa. *African Journal of AIDS Research*, 12(1), 33–40. <https://doi.org/10.2989/16085906.2013.815411>
- McKeever, R. (2015). Vicarious experience: Experimentally testing the effects of empathy for media characters with severe depression and the intervening role of perceived similarity. *Health Communication*, 30(11), 1122–1134. <https://doi.org/10.1080/10410236.2014.921969>
- Musheke, M., Ntalasha, H., Gari, S., McKenzie, O., Bond, V., Martin-Hilber, A., & Merten, S. (2013). A systematic review of qualitative findings on factors enabling and deterring uptake of HIV testing in Sub-Saharan Africa. *BMC Public Health*, 13, 220. <https://doi.org/10.1186/1471-2458-13-220>
- Nyblade, L., Stangl, A., Weiss, E., & Ashburn, K. (2009). Combating HIV stigma in health care settings: what works? *Journal of the International AIDS Society*, 12(1), 15. <https://dx.doi.org/10.1186%2F1758-2652-12-15>

- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology, 90*(5), 751–783. <https://doi.org/10.1037/0022-3514.90.5.751>
- Pisal, H., Sutar, S., Sastry, J., Kapadia-Kundu, N., Joshi, A., Joshi, M., Leslie, J., Scotti, L., Bharucha, K., & Suryavanshi, N. (2007). Nurses' health education program in India increases HIV knowledge and reduces fear. *Journal of the Association of Nurses in AIDS Care, 18*(6), 32–43. <https://doi.org/10.1016/j.jana.2007.06.002>
- Rahmati-Najarkolaei, F., Niknami, S., Aminshokravi, F., Bazargan, M., Ahmadi, F., Hadjizadeh, E., & Tavafian, S. S. (2010). Experiences of stigma in healthcare settings among adults living with HIV in the Islamic Republic of Iran. *Journal of the International AIDS Society, 13*(1), 1–11. <https://dx.doi.org/10.1186%2F1758-2652-13-27>
- Shen, M.J. and Wellman, J.D. (2018). Evidence of palliative care stigma: The role of negative stereotypes in preventing willingness to use palliative care. *Cambridge University Press, 17*(4). <https://doi.org/10.1017/s1478951518000834>
- Steward, W. T., Bharat, S., Ramakrishna, J., Heylen, E., & Ekstrand, M. L. (2013). Stigma is associated with delays in seeking care among HIV-infected people in India. *Journal of the International Association of Providers of AIDS Care, 12*(2), 103–109. <https://doi.org/10.1177/1545109711432315>
- Sweeney, S. M., & Vanable, P. A. (2016). The association of HIV-related stigma to HIV medication adherence: a systematic review and synthesis of the literature. *AIDS and Behavior, 20*(1), 29–50. <https://doi.org/10.1007/s10461-015-1164-1>
- UNAIDS. (2016). *No Title*. UNAIDS. Retrieved March 14, 2020, from <http://www.unaids.org/en/resources/>
- Yiu, J. W., Mak, W. W. S., Ho, W. S., & Yu, Y. (2010). Social Science & Medicine Effectiveness of a knowledge-contact program in improving nursing students' attitudes and emotional competence in serving people living with HIV/AIDS. *Social Science & Medicine, 71*(1), 38–44. <https://doi.org/10.1016/j.socscimed.2010.02.045>

## **Depression, Recurrence, and Perceptions of Physical Fitness among CHD Patients: A Comparison based on Participation in Phase II Cardiac Rehabilitation Program**

**Aan Nuraeni\***, **Atlastieka Praptiwi**, **Ike Nurhidayah**  
Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia  
*Corresponding email: [aan.nuraeni@unpad.ac.id](mailto:aan.nuraeni@unpad.ac.id)*

Submitted: 04-10-2020 Accepted: 17-12-2020 Published: 27-12-2020

### **Abstract**

Coronary heart disease (CHD) patients experience various physical and psychological changes after an acute attack. Depression has been identified as a substantive psychological problem in CHD patients. Cardiac rehabilitation (CR) intends to restore optimal physical and psychological condition of the patients. However, less attention is bestowed towards the psychological aspect of CR. Research on the effects of CR on patient psychological problems has not been discussed in many studies in Indonesia. This study aimed to compare depression, recurrence, and fitness levels among CHD patients based on participation in Phase II CR Program. This research used a quantitative comparative method involving 66 CHD patients recruited by a purposive sampling technique. After applying the selection criteria for this study, the patients were assigned to the CR group (nCR=29) and the non-CR group (nNCR=37). Data were collected using the Beck Depression Inventory-II (BDI II) and instruments developed by researchers to measure recurrence and fitness levels. Data were analyzed using frequency distribution, chi-squared, and Mann-Whitney tests. Depression experienced by CHD patients in both groups with mean in non-CR and CR groups of 11.11 ( $\pm 7.8$ ) and 8.59 ( $\pm 6.5$ ), respectively. There was no significant difference in depression level among the groups ( $p > 0.05$ ). Meanwhile, as many as 45% of the patients in the CR group and 22% in the non-CR group had never experienced chest pain (recurrence) within the past month. In addition, the physical fitness was perceived increased by 90% of the patients in the CR group and 0% in the non-CR group. It was also found that there were significant differences in the recurrence and physical fitness among the two groups ( $p < 0.05$ ). Patients participating in Phase II CR program had a better perception of physical fitness and a lower frequency of chest pain than patients in the non-CR group. Although the depression level in patients in the two groups did not differ significantly, patients in the non-CR group scored higher in depression. Accordingly, assessment and psychosocial interventions need to be improved to optimize CR program services.

**Keywords:** Cardiac rehabilitation, chest pain, coronary heart disease, depression, physical fitness, recurrence.

## Introduction

Global data indicates that every year, many patients with coronary heart disease die and suffer from chronic disabilities (Hoseini et al., 2013). In Indonesia, this disease showed a high number of new incidence and recurrences. The recurrence rate of CHD reached 40% of all patients (Indrawati, 2012); this will increase the number of people with cases if new cases continue to grow. Based on the latest data from Indonesian Basic Health Research, 15 out of 1000 Indonesians were diagnosed with CHD (Ministry of Health of the Republic of Indonesia, 2018).

Following a heart attack, CHD patients require various adjustments as a result of multiple changes. These changes include physical limitations, fatigue, frequent chest pain, shortness of breath, and sexual disturbances (Nuraeni et al., 2016; Rosidawati et al., 2016). Furthermore, the incidence of anxiety (40%) and depression (62%) in CHD patients after an acute attack was relatively high (Nuraeni et al., 2019; Rachmi et al., 2018). Overall, CHD patients' quality of life a few months after going through the acute phase was relatively low (Nuraeni et al., 2019; Nurhamsyah, 2019).

To overcome various physical and psychological changes and improve CHD patients' quality of life, Cardiac Rehabilitation (CR) program is a practical option (Intarakamhang & Intarakamhang, 2013; Yohannes et al., 2010). Janssen et al. (2013) construed that CR might change patients' disease-related perception to improve their quality of life. Furthermore, a CR program, which was carried out comprehensively, had been shown to reduce mortality and morbidity among patients with heart disease (Yohannes et al., 2010).

CR is divided into four phases. According to Radi et al. (2009), phase I CR is an effort immediately carried out while the patient is treated in the hospital. This phase's main objective is to reduce or eliminate the adverse effects of "decondition" due to prolonged bed rest. Early education is also carried out so that the patient can carry out daily activities independently and safely. Phase II is carried out immediately after the patient is discharged from the hospital to return to

optimal function, control risk factors as early as possible, and provide additional education and counseling regarding a healthy lifestyle. These two CR phases are performed in the hospital on an outpatient basis. Phase III and IV are maintenance phases. It is expected that the patient will be able to independently complete a rehabilitation program safely at the same time as maintain a healthy lifestyle.

A phase II CR is a multidisciplinary program with comprehensive services (doctors, nurses, and nutritionists) including medical evaluation, recommended physical exercise, modification of risk factors through education and counseling, and strengthening the coping abilities of patients with the disease process (Dalal et al., 2015; Daly et al., 2002). However, the psychological aspects of the CR program received less attention, even though many research results have shown that these factors contributed to the pathogenesis and the development of heart disease (Kala et al., 2016). CR and exercise training which is carried out comprehensively, according to Lavie et al. (2016) improved psychological function and reduced the risk factors of mortality in people with heart disease. Several studies in Iran, the US, and the UK showed that psychological factors such as stress, anxiety and depression could be lowered through CR (Hoseini et al., 2013; Lavie et al., 2016; Mozafari et al., 2016; Yohannes et al., 2010). In contrast, several studies on phase II CR in Indonesia reined more emphasis on the effects of CR on clinical outcomes, health behaviour, quality of life (Herliani et al., 2015; Rachma, 2018; Sutantri et al., 2019), and barriers to participating in CR (Stevani et al., 2018). Meanwhile, the effect of CR on the improvement of psychological conditions among CHD patients has not been found. Correspondingly, it is important to evaluate the effectiveness of a CR program in managing the physical and psychological problems.

One of the psychological problems that are essential to investigate is depression. According to Frost (2019), CHD patients had an increased risk of mental health problems after a heart attack with a higher prevalence of depression indicated in CHD people than the average population. These included major depressive disorder, which affected

20% of patients experienced a heart attack in the U.S. Moreover, major depressive symptoms can last a long time. Moreover, depression was the strongest predicting factor in decreasing the quality of life among CHD patients in Indonesia (Nuraeni et al., 2016; Nurhamsyah, 2019). Another research discovered that depression increased the risk of death in people with CHD and was added as a risk factor for cardiovascular disease by the American Heart Association (AHA) (Lichtman, Froelicher, Blumenthal, Carney, Lynn, et al., 2014).

The effect of CR in improving the condition of patients with heart problems has been widely proven. However, according to Yohannes et al. (2010), adaptation and evaluation of the program need to be carried out continuously attributable to differences in clinical populations, setting of implementation, and variations in health behaviour. Considering that there was only a few information on how the CR program affected the physical and psychological aspects of people with CHD in Indonesia, further exploration deserved to be conducted. Therefore, this study aimed to identify the comparison of depression, recurrence frequency, and perceptions of physical fitness among CHD patients who participated and did not participate in the CR program. It was expected that this research could provide the latest information on the extent of the CR program effectiveness on physical and psychological aspects of CHD patients, especially phase II.

## Method

This study used secondary data from a previous Indonesian study by Stevani et al., (2018) about inhibiting factors of phase II CR among patients who actively participated and inactively participated in the program. This research utilized quantitative comparative analyses with a cross-sectional approach. This study included all patients with coronary heart disease who were eligible for phase II CR I at a referral hospital in Bandung, West Java, Indonesia. A purposive sampling technique was used with inclusion criteria: patients diagnosed with CHD (Unstable angina pectoris, NSTEMI, STEMI) with or

without reperfusion therapy (fibrinolysis therapy, PCI, CABG). Patients were assigned to the CR group if they had at least six cardiac rehabilitation sessions. In contrast, patients were assigned to the non-CR group if being declared eligible for phase II CR by attending cardiologists but did not participate in the CR program. Patients attended CR program for less than six sessions were excluded in this study.

The sample size was calculated using the formula to compare two proportions, as follows:

$$n = (Z\alpha/2 + Z\beta)^2 * (p_1(1-p_1) + p_2(1-p_2)) / (p_1 - p_2)^2$$

$Z\alpha/2$  for confidence level of 90%, with the critical value is 1.645;  $Z\beta$  for a power of 80%, the critical value is 0.84; and the difference in proportion ( $P_1 - P_2$ ) was considered significant at 30 (Wang & Chow, 2007). Based on the calculation, the sample size was 31 for each group. However, the number of samples in the group participating in the CR was only 29 patients, fulfilling by 94% of the expected target. On the other hand, 37 patients were included in the non-CR group. Overall, 66 patients were recruited as samples in this study.

Depression measurements were carried out using the Beck Depression Inventory-II (BDI II) (Beck et al., 1996), which was translated into Indonesian and tested for validity and reliability in Indonesia's general population. Depression was categorized as follows: not depressed; mild depression; moderate depression; and major depression, based on a score range of 0–13; 14–19; 20–28; and 29–63. The BDI II Indonesian version has a validity value of  $r = 0.39-0.52$ ,  $p < 0.01$ , and Cronbach's  $\alpha$  of 0.90 (Ginting et al., 2013).

To address the recurrence and perceptions of physical fitness, specific questions were developed. For recurrence, the question addressed towards the frequency of chest pain ("how often did you experience chest pain or tightness in the past month?") and each patient's response was recorded as: never (no symptoms of angina in the past month), rarely (if less than one symptom of angina was felt in one week), often (if 2–6 times the symptoms of angina were felt in one week), very often (if

more than six times the symptoms of angina were felt in one week. The measurement of chest pain frequency was based on the Seattle Angina Questionnaire (Spertus et al., 1995), taken from one of the questions that measure aspects of anginal frequency.

For perception of physical fitness, the question raised was “how did you perceive your physical fitness in the past month?” and each patient’s response was recorded as: decreasing, unchanging, or increasing. The perceptions of physical fitness were based on the researcher’s consideration. This perception was measured subjectively related to the respondent’s perceived fitness in the last month without any validity construct.

Validity test was carried out for the question on frequency chest pain, which was compared with the recurrence perception of respondents using the Pearson product-moment, showing the value of  $r\text{-count} (0.319) > r\text{-table} (0.244)$  indicating that the question was valid. For reliability, a Cronbach’s Alpha value was calculated at 0.526.

Data were analyzed using frequency distributions for nominal and ordinal data, while for numerical data such as age and depression, mean scores were calculated. The comparative analyses were performed using chi-square tests for nominal and ordinal data with a significance value ( $p$ )  $< .05$  and Mann-Whitney tests for numeric data with a significance value ( $p$ )  $< .05$ , and both test used 95% CI. To minimize bias in interpreting the research results, two way

ANCOVA were performed at 95% CI to adjust for initial differences between groups (McCarter, 2018). Covariates, including income, duration of being diagnosed with CHD, types of interventions, comorbid, and gender. The analysis was performed using IBM Statistics SPSS 20 software.

Before data collection, ethical approval was obtained from Universitas Padjadjaran Ethics Committee for Research No. 177 / UN6.C10 / PN / 2017. All respondents had been given sufficient information about the research and consents to participate. Moreover secondary data in this study were also used with permissions from related parties.

## Results

Data were collected for three months, from February to April 2017, and obtained 66 respondents, consisting of 29 respondents who attended CR and 37 respondents who never attended CR. Most of the patients were male, aged over 55 years, and were married. A small proportion of respondents had been diagnosed with CHD for less than six months. However, almost all of the patient had undergone cardiac revascularization. Only 6% of the respondents did not revascularized. All patients who were not revascularized were in the non-CR group. The characteristics of the respondents in this study are more clearly shown in Table 1.

**Table 1 Characteristics of Patients**

Characteristics	Participation in Cardiac Rehabilitation				Total (n=66)	p-value
	Non-CR(n=37)		CR (n=29)			
	(n)	Percent (%)	(n)	Percent (%)	(n)	
Gender						
Male	28	76	23	79	51	0.481 <sup>b</sup>
Female	9	24	6	21	15	
Age*(mean)	58.54 ± 8.5		56.86 ± 8.7			0.547 <sup>aa</sup>
Education						
No formal education	1	3	0	0	1	0.689 <sup>b</sup>

**Aan Nuraeni: Depression, Recurrence, and Perceptions of Physical Fitness among CHD Patients**

Primary education	11	30	7	24	18	
Secondary education	4	11	5	17	9	
Higher education	21	56	17	59	38	
Marital status						
Married	32	86	26	90	58	0.500 <sup>b</sup>
Widow/widower	5	14	3	10	8	
Working Status						
Working	32	87	28	97	60	0.158 <sup>b</sup>
Not working	5	13	1	3	6	
Income						
< 2.8 million (IDR)	21	57	13	45	34	0.06 <sup>a</sup>
2.8 – 5 million (IDR)	13	35	7	24	20	
> 5 million (IDR)	3	8	9	31	12	
Duration of being diagnosed with CHD						
≤ 6 months	7	19	6	21	13	0.858 <sup>b</sup>
≥ 6 months	30	81	23	79	53	
Types of interventions						
Medication	4	11	0	0	4	0.014 <sup>b</sup>
Medication, Fibrinolysis	15	41	3	10.3	18	
Medication, PCI	6	16	13	45	19	
Medication, CABG	2	5	3	10.3	5	
Medication, Fibrinolysis and PCI	10	27	7	24	17	
Medication, PCI, and CABG	0	0	1	3.4	1	
Medication, Fibrinolysis, CABG	0	0	1	3.4	1	
Medication, Fibrinolysis, PCI, CABG	0	0	1	3.4	1	
Comorbid						
Did not have	24	65	18	62	42	0.583 <sup>b</sup>
Hypertension	5	13	5	17	10	
Asthma	0	0	1	3	1	
Diabetes Mellitus (DM)	4	11	2	7	6	
Hypertension and DM	3	8	1	3	4	
Chronic Kidney Disease and DM	1	3	0	0	1	
Benign Prostate Hypertrophy and DM	0	0	1	3	1	
Hypertension, DM, and Heart Failure	0	0	1	3	1	

Note: a Mann-Whitney test ; bChi-Squared test

**Table 2 Differences in Depression, Frequency of Angina, and Perceptions of Fitness in Patients Based on Participation in CR Program**

Characteristics	Participation in Cardiac Rehabilitation				Total	P value
	Non-CR (n=37)		CR (n=29)			
	(n)	Percent (%)	(n)	Percent (%)		
Depression* (mean)	11.11 ± 7.8		8.59 ± 6.5			.114 <sup>a</sup>
Depression Category						
Not depressed	27	73	22	76	49	.262
Mild depression	6	16	4	14	10	
Moderate depression	1	3	3	10	4	
Major depression	3	8	0	0	3	
Chest pain frequency (last one month)						
Never	8	22	13	45	21	.038
Rarely	6	16	6	21	12	
Often	15	40	3	10	18	
Very often	8	22	7	24	15	
Perceived fitness level						
Decreased	20	54	0	0	20	.000
Do not change	17	46	3	10	20	
Increased	0	0	26	90	26	

Note: a Mann-Whitney test ; bChi-Squared test

**Table 3 Effect of Income, Duration of Diagnosis of CHD, Type of Intervention, Comorbid, and Gender on The Dependent Variable (Depression, Frequency of Angina, and Perceptions of Fitness) in Patients Based on Participation in CR Program**

Characteristics	Dependent variables		
	Depression Category	Perceived fitness level	Chest pain frequency
	p-value	p-value	p-value
Gender			
Male	.452	.729	.244
Female			
Incomes			
< 2.8 million (IDR)	.417	.256	.231
2.8 – 5 million (IDR)			
> 5 million (IDR)			
Had been diagnosed with CHD			
≤ 6 months	.257	.612	.129
≥ 6 months			
Types of interventions			

Medication	.511	.258	.121
Medication, Fibrinolysis			
Medication, PCI			
Medication, CABG			
Medication, Fibrinolysis and PCI			
Medication, PCI, and CABG			
Medication, Fibrinolysis, CABG			
Medication, Fibrinolysis, PCI, CABG			
Comorbid			
Did not have	.711	.662	.346
Hypertension			
Asthma			
Diabetes Mellitus (DM)			
Hypertension and DM			
Chronic Kidney Disease and DM			
Benign Prostate Hypertrophy and DM			
Hypertension, DM, and Heart Failure			

Note: Using the two ways ANCOVA test, with a significance level of  $p < .05$

Table 2 shows a significant difference in chest pain frequency and perceived fitness between patients who participated and did not participate in CR. However, there was no significant difference in depression in both groups.

Table 3 Effect of income, duration of diagnosis of CHD, type of intervention, comorbid, and gender on the dependent variable (depression, frequency of angina, and perceptions of fitness) in patients based on participation in CR Program.

Table 3 shows no effect on the covariate variables consisting of income, duration of diagnosis of CHD, types of interventions, comorbid, and gender on the dependent variable in this study (depression, frequency of angina, and perceptions of fitness), represented by a  $p$ -value  $> .05$ . This value signifies that the covariate variable does not influence the comparison between the two groups' dependent variable.

## Discussion

Based on the analysis results, the existing CR program contributed to a marked difference in the improvement of physical function, but not the patients' psychosocial problem.

The improvement of physical function can be weighed by the frequency of chest pain and the perception of physical fitness. CHD patients participating in CR had a more higher proportion of those experienced no chest pain within the past month. In contrast, the majority of CHD patients who did not participated in CR experienced a much worse chest pain. The findings of this study support previous study (Yohannes et al., 2010), which found that CR provides better physical function results and reduces the risk of depression in people with CHD.

The results also suggested that non-CR groups had a higher percentage of chest pain frequency with a higher intensity. This condition may occur because, in CR, the physical activity ability of a CHD patient is enhanced through regular physical exercise and measured to increase the functional capacity of the body closer to the pre-heart-attack condition. Studies on CHD patients undergoing CR have shown a better physical condition, marked by increased energy level, physical function, general health, and chest pain improvement (Dalal et al., 2015; Schopfer & Forman, 2016; Yohannes et al., 2010). In this way, the existing CR program so far, effectively improved the physical aspects, immensely improved chest pain

frequency and increased fitness perception in patients participating CR at least six times regularly.

The decrease in the frequency and intensity of chest pain in patients undergoing CR may be associated with increased maximal oxygen uptake (VO<sub>2</sub>max) ability. As previously known, an increase in oxygen demand without an adequate oxygen supply to the heart cause chest pain due to anaerobic metabolism that produces lactic acid. Several studies have shown that physical exercise carried out over a long time, and immediately after heart problems has been shown to improve VO<sub>2</sub> max ability in CHD (Valkeinen et al., 2010). This improvement in oxygen uptake ability prevents anaerobic metabolism, which reduces the frequency and intensity of chest pain.

Exercise was also able to improve the physical functional capacity of CHD patients undergoing CR (Dalal et al., 2015; Menezes et al., 2014; Yohannes et al., 2010), which in this study was reported indirectly through perceptions of physical fitness. Perceived fitness was observed to be better in CHD patients participating in the CR program than in the non-participating group of patients. Perceived fitness was also closely related to the frequency and levels of chest pain that were noted to be higher in the non-CR group. Therefore, results indicate the effectiveness of CR program in improving the physical aspects of CHD patients. The findings also corroborate previous studies which found that CR is positively correlated with physical improvement and physical capacity of CHD patients (Herliani et al., 2015; Lavie et al., 2016; Lippi et al., 2016; Rutledge et al., 2013; Schopfer & Forman, 2016; Yohannes et al., 2010).

In terms psychosocial aspects measured by the level of depression in this study, there was no difference in depression among CHD patients in both non-CR and CR groups. This indicates that the effectiveness of current CR program on the psychological aspects presents a room for improvement. The comprehensive implementation of CR impacts on improving physical and psychological problems as well as improving the quality of life. The results of a meta-analysis conducted by Gellis and Kang-Yi (2012) show that in general, CR programs

combined with psychosocial interventions are effective in reducing depression in adult cardiac patients compared to the standard treatments. Two studies conducted in Iran also showed that CR effectively reduced depression in both CHD patients undergoing PCI and CABG (Hoseini et al., 2013; Mozafari et al., 2016). Mozafari et al., (2016) further explained that post-CABG patients in the intervention group underwent eight CR meetings, which were held for four weeks, and each week was given two sessions. The training program provided includes a fitness program and education. Education materials provided were the use of drugs and diet and weight control, smoking cessation, stress management, relaxation, and light physical exercise.

The lack of significant differences in depression between non-CR and CR groups in this study could be attributable to several reasons. Referring to previous research, CR can positively impact depression if done comprehensively, including physical and psycho-spiritual aspects. Conversely, if CR is done partially, in this case, it focuses more on the patient's physical aspects and overlooks the psychological aspects, then this will lead to undetectable psychological problems. Another reason is that the measurement of depression might be too fast so that the patient has not achieved the expected psychosocial changes. As revealed in a previous study, a decrease in depression in post-CABG CHD patients was evident after undergoing eight CR meetings (Mozafari et al., 2016). In contrast to Mozafari et al. (2016), in this study, the majority of the patients in the CR group had only participated at least six meetings. Furthermore, in both groups, some patients had mild and moderate depression. If the score changed, the change would not significantly change the depression category result. The results of the previous meta-analysis confirm this reason. In previous studies, it was explained that CR's ineffectiveness in reducing depression in some studies could occur as a result of measuring depression too quickly. Some patients were in the mild and moderate depression category, and some patients had undergone CR for a long time before the study was conducted (Gellis & Kang-Yi, 2012).

However, even though there was no significant difference in depression between these two groups, the incidence of depression in the CR group was lower. The results can be specified from the lower mean depression score in the CR group, and all patients with severe depression were in the non-CR group. This study provides information for health workers in the care of patients with CHD and CR. In general, the average depression score for all patients is low; however, it was found that approximately 25.7% of patients experienced mild to severe depression.

Depression in CHD patients is a psychosocial problem that is often experienced and has a negative impact. Lichtman, Froelicher, Blumenthal, Carney, Doering, et al. (2014) stated that the risk of death is higher in CHD patients who experience depression. This result was also upheld by Gu et al. (2019) that depression was an independent prognostic factor for all causes of death and other cardiovascular problems in patients with Myocardial Infarction with non obstructive coronary arteries (MINOCA) in China. Whereas in Indonesia, two studies showed that depression was the most influential factor in reducing CHD patients' quality of life (Nuraeni et al., 2016; Nurhamsyah, 2019). This condition implies the importance of prevention and management of depression. Depression warrants considerable attention from healthcare professionals treating CHD patients. Existing CR program needs to be revisited to ensure it provides adequate psychosocial interventions in conjunction with the physical exercise. Moreover, overall effectiveness of CR program in CHD patients requires a continuous evaluation.

## Conclusion

Patients who participated in CR program had a better perception of physical fitness and experienced a lower frequency of angina than patients who did not participate in the program. Concerning depression, there was no significant difference in patients in both non-CR and CR groups.

In this study, the improvement in physical aspects did not significantly affect the

improvement of depression within the two groups. It is recommended optimizing the implementation of counseling and other psychosocial problem interventions in the CR program. It is also necessary to carry out a further evaluation of the effectiveness of the CR program with a larger number of parameters and patients as well as a more objective measuring tool.

## References

- Beck, A. T., Steer, R. A., Ball, R., & Ranieri, W. F. (1996). Comparison of Beck Depression Inventories-IA and-II in psychiatric outpatients. *Journal of personality assessment*, 67(3), 588–597. [https://doi.org/10.1207/s15327752jpa6703\\_13](https://doi.org/10.1207/s15327752jpa6703_13)
- Dalal, H. M., Doherty, P., & Taylor, R. S. (2015). Cardiac rehabilitation. *BMJ*, 5000(September), 1–8. <https://doi.org/10.1136/bmj.h5000>
- Daly, J., Sindone, A. P., Thompson, D. R., Hancock, K., Chang, E., & Davidson, P. (2002). Barriers to participation in and adherence to cardiac rehabilitation programs: a critical literature review. *Progress in Cardiovascular Nursing*, 17(1), 8–17. <https://doi.org/10.1111/j.0889-7204.2002.00614.x>
- Frost, J. (2019). Practice Guidelines Depression Following Acute Coronary Syndrome Events : Screening and Treatment Guidelines from the AAFP. *American Family Physician*, 99(15), 786B–786J.
- Gellis, Z. D., & Kang-Yi, C. (2012). Meta-analysis of the Effect of Cardiac Rehabilitation Interventions on Depression Outcomes in Adults 64 Years of Age and Older. *American Journal of Cardiology*, 110(9), 1219–1224. <https://doi.org/10.1016/j.amjcard.2012.06.021>
- Ginting, H., Näring, G., Van Der Veld, W. M., Srisayekti, W., & Becker, E. S. (2013). Validating the Beck Depression Inventory-II in Indonesia's general population and coronary heart disease patients. *International Journal of Clinical and Health Psychology*,

13(3), 235–242. [https://doi.org/10.1016/S1697-2600\(13\)70028-0](https://doi.org/10.1016/S1697-2600(13)70028-0)

Gu, X., He, C., Shen, L., & Han, B. (2019). Association Between Depression and Outcomes in Chinese Patients With Myocardial Infarction and Nonobstructive Coronary Arteries. *Journal of the American Heart Association*, 1–6. <https://doi.org/10.1161/JAHA.118.011180>

Herliani, Y. K., Matchim, Y., & Kritpracha, C. (2015). Health Behaviors and Clinical Outcomes Among Patients with Myocardial Infarction in Indonesia. *Jurnal NERS*, 10(2), 308. <https://doi.org/10.20473/jn.v10i22015.308-317>

Hoseini, S., Soltani, F., Babae Beygi, M., & Zarifsanaee, N. (2013). The effect of cardiac rehabilitation on anxiety and depression in patients undergoing cardiac bypass graft surgery in Iran. *Journal of Clinical Nursing*, 22(11–12), 1613–1619. <https://doi.org/10.1111/jocn.12125>

Indrawati, L. (2012). *Analisis Faktor Yang Berhubungan Dengan Kemampuan Pasien PJK Melakukan Pencegahan Sekunder Faktor Risiko Di RSPAD Gatot Soebroto Jakarta*. [Master's thesis, University of Indonesia]. Universitas Indonesia. Retrieved February 2, 2020, from <https://lib.ui.ac.id/file?file=digital/20313795-T%2031743-Analisis%20faktor-full%20text.pdf>

Intarakamhang, P., & Intarakamhang, U. (2013). Effects of the comprehensive cardiac rehabilitation program on psychological factors and quality of life among coronary heart disease patients. *Global Journal of Health Science*, 5(2), 145–152. <https://doi.org/10.5539/gjhs.v5n2p145>

Janssen, V., De Gucht, V., Van Exel, H., & Maes, S. (2013). Changes in illness perceptions and quality of life during participation in cardiac rehabilitation. *International Journal of Behavioral Medicine*, 20(4), 582–589. <https://doi.org/10.1007/s12529-012-9260-3>

Kala, P., Hudakova, N., Jurajda, M., Kasperek, T., Ustohal, L., Parenica, J., Sebo, M.,

Holicka, M., Kanovsky, J., Thombs, B., Bass, E., Ford, D., Stewart, K., Tsilidis, K., Patel, U., Lane, D., Carroll, D., Ring, C., Beevers, D., ... Zung, W. (2016). Depression and Anxiety after Acute Myocardial Infarction Treated by Primary PCI. *Plos One*, 11(4), e0152367. <https://doi.org/10.1371/journal.pone.0152367>

Lavie, C. J., Menezes, A. R., De Schutter, A., Milani, R. V., & Blumenthal, J. A. (2016). Impact of Cardiac Rehabilitation and Exercise Training on Psychological Risk Factors and Subsequent Prognosis in Patients with Cardiovascular Disease. *Canadian Journal of Cardiology*. <https://doi.org/10.1016/j.cjca.2016.07.508>

Lichtman, J. H., Froelicher, E. S., Blumenthal, J. A., Carney, R. M., Lynn, V., Frasura-smith, N., Freedland, K. E., Jaffe, A. S., Leifheitlimson, E. C., Sheps, D. S., Vaccarino, V., & Wulsin, L. (2014). *Depression as a Risk Factor for Poor Prognosis Among Patients With Acute Coronary Syndrome : Systematic Review and Recommendations*. <https://doi.org/10.1161/CIR.0000000000000019>

Lippi, G., Sanchis-Gomar, F., & Cervellin, G. (2016). Chest pain, dyspnea and other symptoms in patients with type 1 and 2 myocardial infarction. A literature review. *International Journal of Cardiology*, 215, 20–22. <https://doi.org/10.1016/j.ijcard.2016.04.045>

McCarter, K. S. (2018). *Analysis of Covariance* (pp. 235–277). <https://doi.org/10.2134/appliedstatistics.2016.0006.c9>

Menezes, A. R., Lavie, C. J., Milani, R. V., Forman, D. E., King, M., & Williams, M. A. (2014). Cardiac Rehabilitation in the United States. *Progress in Cardiovascular Diseases*, 56(5), 522–529. <https://doi.org/10.1016/j.pcad.2013.09.018>

Ministry of Health of the Republic of Indonesia. (2018). *Hasil Riset Kesehatan Dasar 2018* (Basic Health Research Results). Retrieved January 28, 2020, from <http://labdata.litbang.depkes.go.id/menu-progress-puldata/progress-puldata-rkd-2018>

- Mozafari, A., Baharvand, A., Mohebi, S., & Hejazi, S. F. (2016). Impact of Cardiac Rehabilitation on Depression after Percutaneous Coronary Intervention. *Journal of Health*, 7(3), 356–364.
- Nuraeni, A., Mirwanti, R., Anna, A., & Nurhidayah, I. (2019). Determinant Factors of Depression in Patients with Coronary Heart Disease. *Padjadjaran Nursing Journal*, 7(3), 246–254. <https://doi.org/10.24198/jkp>
- Nuraeni, A., Mirwanti, R., Anna, A., Prawesti, A., & emaliyawati, etika. (2016). Faktor yang Memengaruhi Kualitas Hidup Pasien dengan Penyakit Jantung Koroner. (Factors Affecting Quality of Life of Patients with Coronary Heart Disease). *Jurnal Keperawatan Padjadjaran*, 4(2). <https://doi.org/10.24198/jkp.v4i2.231>
- Nurhamsyah, D. (2019). *Analisis Faktor yang Berhubungan Dengan Kualitas Hidup Pasien Pasca Sindrom Koroner Akut Di RSUP DR. Hasan Sadikin Bandung. (Analysis of Factors Associated with Quality of Life of Post-Acute Coronary Syndrome Patients at RSUP DR. Hasan Sadikin Bandung)*. Universitas Padjadjaran.
- Rachma, N. (2018). Effect of Cardiac Rehabilitation on NT-Pro BNP, METS, and Quality of Life, in Patients with Coronary Artery Disease after Undergoing Percutaneous Coronary Intervention. *Indonesian Journal of Medicine*, 3(3), 146–150. <https://doi.org/10.26911/theijmed.2018.03.03.04>.
- Rachmi, F., Nur'aeni, A., & Mirwanti, R. (2018). Kecemasan Berhubungan Dengan Frekuensi Agina: Studi Korelatif Pada Pasien Pasca Sindrom Koroner Akut. (Anxiety Associated with Angina Frequency: Correlative Study in Post-Acute Coronary Syndrome Patients). *Medisains: Jurnal Ilmiah Ilmu-Ilmu Kesehatan*, 16(1–7).
- Radi, B., Joesoef, A. H., & Kusmana, D. (2009). Rehabilitasi Kardiovaskular Di Indonesia. (Cardiovascular Rehabilitation In Indonesia). *Majalah Kardiologi Indoneisa.*, 30(2), 43–45. Retrieved 28 January, 2020, from [indonesia.digitaljournals.org/index.php/karidn/article/.../311/310?](http://indonesia.digitaljournals.org/index.php/karidn/article/.../311/310?)
- Rosidawati, I., Ibrahim, K., Nuraeni, A., Muhammadiyah, U., Keperawatan, F., & Padjadjaran, U. (2016). Kualitas Hidup Pasien Pasca Bedah Pintas Arteri Koroner ( BPAK ). (Quality of Life among Patients with Post Coronary Artery Bypass Surgery). *Jurnal Keperawatan Padjadjaran*, 4, 151–161. <https://doi.org/10.24198/jkp.v4i2.238>
- Rutledge, T., Redwine, L. S., Linke, S. E., & Mills, P. J. (2013). A meta-analysis of mental health treatments and cardiac rehabilitation for improving clinical outcomes and depression among patients with coronary heart disease. *Psychosomatic Medicine*, 75(4), 335–349. <https://doi.org/10.1097/PSY.0b013e318291d798>
- Schopfer, D. W., & Forman, D. E. (2016). Benefits of cardiac rehabilitation in older adults. *American College of Cardiology*. Retrieved January 28, 2020, from <https://www.acc.org/latest-in-cardiology/articles/2016/10/19/09/22/benefits-of-cardiac-rehabilitation-in-older-adults>
- Spertus, J. A., Winder, J. A., Dewhurst, T. A., Deyo, R. A., Prodzlinski, J., Mcdonell, M., & Fihn, S. D. (1995). Development and Evaluation I? f the Seattle Angina Questionnaire: A New Functional Status Measure for Coronary Artery Disease. 25(2). [https://doi.org/10.1016/0735-1097\(94\)00397-9](https://doi.org/10.1016/0735-1097(94)00397-9)
- Stevani, M. D., Nuraeni, A., & Sari, E. A. (2018). The Distinction of Inhibiting Factors among Patients who Actively and Inactively Participate in Phase II Cardiac Rehabilitation. *Jurnal Keperawatan Padjadjaran*, 6(2), 109–119. <https://doi.org/10.24198/jkp.v6i2.550>
- Sutantri, S., Cuthill, F., & Holloway, A. (2019). ‘A bridge to normal’: a qualitative study of Indonesian women’s attendance in a phase two cardiac rehabilitation programme. *European Journal of Cardiovascular Nursing*, 18(8), 744–752. <https://doi.org/10.1177/1474515119864208>
- Valkeinen, H., Aaltonen, S., & Kujala, U.

M. (2010). Effects of Exercise Training on Oxygen Uptake in Coronary Heart Disease: A systematic Review and Meta-analysis. *Scandinavian Journal of Medicine and Science in Sports*, 20(4), 545–555. <https://doi.org/10.1111/j.1600-0838.2010.01133.x>

Wang, & Chow. (2007). *Sample Size Calculation for Comparing Proportions*.

Wiley Encyclopedia of Clinical Trials.

Yohannes, A. M., Doherty, P., Bundy, C., & Yalfani, A. (2010). The long-term benefits of cardiac rehabilitation on depression , anxiety , physical activity and quality of life. *Journal of Clinical Nursing*, 19, 2806–2813. <https://doi.org/10.1111/j.1365-2702.2010.03313.x>

## **Increasing Prevention Knowledge of Sexual Violence and Emotional Maturity on Children through the Mini-Movie Media**

**Iqlima Dwi Kurnia\*, Ilya Krisnana, Farida Norma Yulianti**  
Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia  
*Corresponding email: iqlima.dwi.k@fkep.unair.ac.id*

Submitted: 20-07-2020 Accepted: 18-12-2020 Published: 27-12-2020

### **Abstract**

Sexual violence against children is one of the world's problem that has an impact on the mental, physical, and psychological conditions such as depression, fear, shame, which can lead to suicide for the victim. The level of prevention knowledge and emotional maturity in the child needs to be grown. Objective of this study was analyze the effect of mini movie on the level of knowledge prevention of sexual violence and the level of emotional maturity in school-age children. Mini movie video according to research by the American Psychological Association (APA) is an audio-visual media with message conveyed in the form of short films through hearing and sight. Mini movie contains 2 video, the first video taken from UNICEF Indonesia. The second video came from center for study and child protection (PKPA). This study used quasi experimental design with two groups and involved 85 students. The Emotional Maturity and Knowledge of Child Abuse Questionnaire used as the instrument. This research conducted used a simple random sampling technique. The research showed that mini movie media had a significant impact on the level of prevention knowledge sexual violence ( $p=0.000$ ) and the level of emotional maturity ( $p=0.000$ ) Mini movie media becomes a mass approach in modern era that can provide accurate information in delivering health messages for children. Education through mini movie media can stimulate children's awareness and teacher as an effort to prevent sexual violence by increasing children's knowledge and emotional maturity.

**Keywords:** Child abuse sexual, knowledge, motion picture.

## Introduction

Domestic violence is a common problem in society (Chimeno et al., 2020). Sexual violence is a form of criminal action that is undertaken to satisfy the sexual desire by forcing, persuading, threatening of children powerlessness in the conduct of forced sexual activities (McKibbin et al., 2017). Children problems frequently occur in relation to physical, psychological and social changes (Solehati et al., 2018). The Lack sexual education taught in children can influence the level of emotional maturity and child knowledge in assessing deviant situations in the surrounding environment (Edwards et al., 2019). The advantages of Mini movie media that can be used as a research intervention are displaying animated images that sound can emphasize the reality of the problems that occur, so that the information provided can be understood (Andriani, Ardianto, & Srisanto, 2017).

Studies conducted internationally confirm that child sexual abuse is a much more widespread problem than previously thought, with even the lowest prevalence rates including a large number of victims that need to be taken into account (Pereda et al., 2009). The analysis showed that 7.9% of men (7.4% without outliers) and 19.7% of women (19.2% without outliers) had suffered some form of sexual abuse prior to the age of eighteen (Pereda et al., 2009). Reports obtained by the Chairperson of the KPAI regarding sexual violence against boys have increased, seen from data on cases that have occurred in several regions of Indonesia (Setiawan, 2018)

Many victims of acts of violence acts are psychologically traumatized (Franke et al., 2019). There are 95% of male victims from sexual violence do not report themselves to child protection (McKibbin et al., 2017). Psychosocial problems experienced by child victims of sexual violence also felt by the family (Novianty et al., 2015). The Indonesian Child Protection Commission (Quoted in UNICEF, 2018) states that sexual violence that occurs to children every year is quite high (more than 100 cases) and the perpetrator is the closest person to the victim Perpetrators of sexual violence against

children committed by close people such as stepfathers and children, uncles, closest family (85%) and the rest (15 percent) by outsiders (PKPA, 2015).

Sexual abuse and sexual assaults against are among the most significant threats to their health and well-being (Runarsdottir et al., 2019). The increasing cases of sexual violence can have a negative impact on victims, such as physical and psychological damage in the form of mental trauma, depression (Wheeler & McElvaney, 2017). Behaviors of sexual violence in children with physical or emotional abuse can impact the development of sexual behavior and aggression that are harmful to the child's Future (Fong et al., 2017).

The impact of sexual violence occurring in children can affect the level of emotional maturity and knowledge in children in view of future life (Louboutin & Gardner, 2013). Lack of emotional maturity and lack of knowledge in children can make children victims of sexual violence (Warratch et al., 2020). A strategy that can be given to increase children's knowledge and emotional maturity is to provide health education using mini-movie media. The advantages of mini-movie media that can be used as a research intervention are by displaying animated images that sound can emphasize the reality of the problems that occur (Wahyuningtyas, 2017).

The results of the study stated that the most common identity of the perpetrator was the biological father (50%), biological sibling (14.4%), stepfather (13.9%), and parent's boyfriend (12%). 6.5% of the perpetrators were female and 93.5% were male (Koçtürk & Yüksel, 2019). Sexual education with the buzz method can increase the role of parents in educating children to prevent sexual abuse. Few children who have reported experiencing sexual violence can give misunderstandings about sexual behavior, for that the correct understanding of the child regarding sexuality is indispensable in the hope that the child can know the importance of protecting their self to avoid sexual abused (Van Der Merwe, 2011). However, studies that explain the effect of mini movie on the level of knowledge prevention of sexual violence and the level of emotional maturity in school-

age children do not yet exist. The purpose of this study was to analyze the effect of mini movie on the level of knowledge prevention of sexual violence and the level of emotional maturity in school-age children.

## Method

This research was quasi experiment pre-posttest control group design. The population in this research was a 4th grade child elementary School were 217 students. Primary schools used in the study were both in the treatment and control groups in localized areas, precisely in Sawahan District, Surabaya. Selected two schools that meet the criteria, namely elementary schools that have accreditation A and schools that have never conducted research on sexual violence against children. One school as a treatment group and one school as a control group. The sampling size of this study was based on the calculation of the sample size using the Krejcie and Morgan formula (Nursalam, 2016). The number of samples were 85. Sampling in this study using probability sampling with the simple random sampling technique. The study was conducted in April to May 2019, with the criteria of inclusion of children who were in grade 4 and the exclusion criteria of children who were sick or not in place.

The Independent variable was mini movie media while the dependent variables in the study were the knowledge of prevention of sexual violence and the level of emotional maturity in school-age children.

Mini movie video according to research by the American Psychological Association (APA) is an audio-visual media with message conveyed in the form of short films through hearing and sight. Mini movie contains 2 video, the first video taken from UNICEF Indonesia (UNICEF, 2014), with the title “Kisah Si Geni with the link <https://www.youtube.com/watch?v=z2ajcg-KTY&feature=youtu.be>”. This video is 1.58 minutes which contains information for children to prevent and be aware of sexual abuse committed by others, especially adults. The second video came from center for study and child protection (PKPA) with the title

“Katakan Tidak” (Komisi perlindungan anak Indonesia, 2015) with the link <https://www.youtube.com/watch?v=FsCGDx2SP9k&feature=youtu.be>. It takes 10.37 minutes which contains information about forms of sexual violence, adults who may be the perpetrators of sexual violence, ways to deal with emotions and those who can be contacted to report incidents of sexual violence on children. All videos can be freely accessed by children through YouTube.

Children Knowledge of Abuse Questionnaire (CKAQ) was used to measure the level of children’s knowledge about the prevention of sexual violence adopted from Tutty (Tutty, 1995). The CKAQ questionnaire was translated into Indonesian. The translation was carried out by researchers in consultation with experts in the field of English and then for suitability with Indonesians, validity and reliability were tested. All items of the questionnaire had a good validity scores and the reliability testing had a Cronbach’s  $\alpha$  score = 0,712. CKAQ questionnaire consisted of 33 questions with 3 subscales namely; 1) self-responsibility (6 questions), 2) make anticipation of self-protection (6 questions), and 3) understanding of what is wrong and right (21 questions). Knowledge questionnaire consist of multiple choice questions which when answered correctly then score 1 and when wrong score 0. The number for favorable questions are 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 16, 17, 18, 20, 21, 23, 24, 26, 27, 28, 29, 30, 32, 33. The number for unfavorable questions are 1, 2, 11, 12, 15, 19, 22, 25, 27, 31, 32. Children’s level of knowledge is divided into 2 categories, namely low level of knowledge (score <17) and high level of knowledge (score 17–33).

The children’s emotional maturity questionnaire modified by the researcher according to the 3 domains of emotional maturity (Hurlock, 1999). The Questionnaire for emotional maturity was translated into Indonesian. The translation was carried out by researchers in consultation with experts in the field of English and then for suitability with Indonesians, validity and reliability were tested. All items of the questionnaire had a good validity scores and the reliability testing had a Cronbach’s  $\alpha$  score = 0.699. Child emotional maturity questionnaire consists

of 12 questions with 3 subscales, namely 1) children's self-understanding that develops towards independent, 2) Understanding the use of mental crisis functions, and 3) emotional control. Response answers in the form of a Likert scale 1–4 namely strongly agree (4), agree (3), disagree (2) and strongly disagree (1) for favorable questions. While questions that are unfavorable are given a reverse score. The number for favorable questions are 1, 2, 6, 9, 10, 11, 12, while the number for unfavorable questions are 3, 4, 5, 7, 8. The level of emotional maturity is divided into 3 namely 1) high emotional maturity (score 37–48), 2) moderate emotional maturity (score 25–36), and 3) low emotional maturity (score 12–24).

The first step researchers went to elementary school to looking for information from one of the principals and teachers. Researchers conducted observations and interviews about research previously that had been done in each school. The researcher also conducted a survey in each class to find the number of data and determine respondents according to the inclusion criteria: 4th grade has 3 classrooms, namely 4A, 4B, and 4C. Each class consists of 35-36 students who fit the inclusion criteria. The researcher chooses respondents using a simple random sampling technique using paper that was written in the student's presence list number and taken at random, after that the researcher takes the paper according to the large number of samples calculated to be the subject of the study. After obtained the Principal's approval and gave permission to conduct the research. Subject selected according to inclusion criteria. Subject got the research explanation before joined in the study. Informed consent was given to the homeroom teacher the day before the study. The next day the students

were given a pre-test before the mini movie intervention.

Mini movie intervention was given twice a week for two weeks. The subject were given mini movie in the classroom. The total time needed at the first meeting was 30 minutes consist of viewing of Mini movie and the ends with a discussion session. The first mini movie "Si Geni" which contains information for children to prevent and be aware of sexual abuse committed by others, especially adults. While the second meeting was played mini movie from PKPA wich contains information about forms of sexual violence, adults who may be the perpetrators of sexual violence, ways to deal with emotions and those who can be contacted to report incidents of sexual violence on children. So it will be preventing sexual violence behavior. The second meeting was held the day after the first meeting. The next stage the subject was given a posttest questionnaire in one room in school hall at 7 days after intervention for knowledge and 14 days for intervention for emotional maturity. The subject was given the opportunity for 7 days and 14 days to internalize information already obtained through mini movie media in the form of an understanding of knowledge and emotional maturity in the prevention of violent behavior.

The Data was analyzed by using Wilcoxon signed rank test and the Mann-Whitney U Test with the level of significance  $\alpha=.05$ .

This research has been declared a review and obtained a certificate of Ethical Approval with No. 1370-KEPK issued by the Medical Research Ethics Committee of Faculty of Nursing Universitas Airlangga on April 23, 2019.

## Results

**Table 1 Respondent Characteristic (April-May 2019)**

Characteristic Category	Intervention group		Control group		total	%	
	f	%	f	%			
Age	9 years	4	9.5	0	0	4	4.7
	10 years	32	76.2	34	79.0	66	77.6
	11 years	4	9.5	9	21.0	13	15.2
	12 years	2	4.8	0	0	2	2.5
Total	42	100.0	43	100.0	85	100.0	

Gender	Female	25	59.5	17	39.5	43	50.6
	Male	17	40.5	26	60.5	42	49.4
	Total	42	100.0	43	100.0	85	100.0

**Table 2 Knowledge Before and After Intervention Mini Movie (Intervention and Control Group)**

Knowledge	Intervention group				Control group			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Low	5	11.9	0	0	5	11.63	6	14
High	37	88.1	42	100	38	88.37	37	86
Total	42	100	42	100	43	100	43	100

Wilcoxon Rank Test p = 0.025 P = 0.458

**Table 3 The Effect of Mini Movie on Respondent Knowledge (Intervention and Control Group)**

Knowledge	Post test Intervention group		Post test Control group	
	f	%	f	%
Low	0	0	6	14
High	42	100	37	86
Total	42	100	43	100

Mann Whitney Test p = 0.000

**Table 4 Emotional Maturity Before and After Intervention (Intervention and Control Group)**

Emotional Maturity	Intervention group				Control group	
	Pre-test		Post-test		Pre-test	Post-test
	f	%	f	%	f	%
Low	0	0	0	0	0	0
Moderate	21	50	4	9.5	14	13
High	21	50	38	90.5	29	30
Total	42	100	42	100	43	43

Wilcoxon Rank Test p = 0.000 Wilcoxon Rank Test p = 0.317

**Table 5 Effect of Mini Movie Media on The Level of Emotional Maturity**

Emotional Maturity	Post test Intervention group		Post test Control group	
	f	%	f	%
Rendah	0	0	0	0
Low	4	9.5	13	30.2
Moderate	38	90.5	30	69.8
Total	42	100	43	100

Mann Whitney Test p = 0.000

From the table 1 show that the distribution of respondent based of age in the intervention and control grup are mostly 10 years old. The distribution of the gender from each group was mostly girls as many as 25 respondents for intervention group and 26 respondents for control group.

Table 2 show that the level of knowledge of children in the intervention group before giving Minimovie media some respondents have a high level of knowledge category as many as 37 respondents (88.1%) and after giving Mini movie media the level of knowledge of sexual violence prevention, experienced a change to the high category as many as 42 respondents (100%). The statistical test with the Wilcoxon Rank Test obtained p value = 0.025 ( $p < 0.05$ ). In means that mini movie effect on increasing respondent knowledge. The control group p value = 0.458 so that  $p > 0.05$ , which means that there is no significant difference in knowledge between the pre-test and post-test scores.

The statistical test with the Mann-Whitney U Test obtained p value = 0.000 ( $p < 0.05$ ), indicating that there was a significant effect of Mini movie media on the level of knowledge of sexual violence prevention between students in the intervention group and the control group.

Table 4 show that the level of emotional maturity of children in the intervention group before giving Mini movie media some respondents have the same level category as many as 21 respondents (50%) and after giving a change to the high category as many as 42 respondents (100%). The statistical test with the Wilcoxon Rank Test obtained p value = 0.000 ( $p < 0.05$ ). In means that mini movie effect on increasing emotional maturity. The control group p value = 0.317 so that  $p > 0.05$ , which means that there is no significant difference in emotional maturity between the pre-test and post-test scores.

The statistical test with the Mann-Whitney U Test obtained p value = 0.000 ( $p < 0.05$ ), indicating that there was a significant effect of Mini movie media on the level emotional maturity between students in the intervention group and the control group.

## Discussion

Provision of information through mini-movie media, can be a strong stimulus to increase knowledge and provide changes in attitudes to respondents. This is in line with research that discusses the effect of a communication is a change in attitude and will depend on the extent to which communication can be considered, understood, and accepted (Azwar, 2015). Knowledge of sexual violence prevention obtained through mini-movie media in health promotion can provide information for respondents and become the most important domain for the formation of behavior and self-awareness in the surrounding environment in an effort to prevent sexual violence.

The Mini movie media had an influence on the increased knowledge of sexual violence prevention. The message that has been delivered in short film through hearing and vision will have more appeal, so the stimulus will give good knowledge to raise the child's behavior and learn other sources. Individuals who have received further stimulus will give knowledge of consciousness in him, so that with the knowledge of prevention of sexual violence the child has the awareness of the dangers and impacts of the crime of sexual violence happening around the environment. A person's good behavior, and an unqualified impression can have a bad impact (Handayani, 2017). The results of this study are consistent with the research conducted by (Van Der Merwe, 2011), which states that media mini movie according to research the American Psychological Association (APA) Audio visual media in quality learning affects a person's good behavior, and an unqualified impression can have a bad impact.

The health promotion model theory aims to provide an intervention in promoting a healthy lifestyle in changing behaviors. (Vives-Cases et al., 2019). The importance of the precautionary knowledge of sexual violence given to children to prevent sexual violence (Tutty, 1995). Child awareness of the dangers of sexual violence gained through a video served on a computer to enhance knowledge with good behavioral changes and not to In overcoming Life's challenges (Davies et al., 2013).

The mini movie media has an influence on increasing the children's emotional maturity in an effort to prevent sexual violence. Mini movie is an image and sound that is displayed with an electronic mechanized motion, thus reviving the state of the Illusion of movement (Handayani, 2017).

The effect of awarding mini movie as a method used in animated learning activities can stimulate and attract individual attention, so it can influence the mindset in motivating learning (Abaraogu et al., 2019). Research that has been done according to Edgar Dale cone of learning diagram emphasizes the importance of media for children in education, i.e. information obtained through hearing media and vision can largely be remembered (Reuter et al., 2019). So it will make easier for children to accept the information provided and then knowledge about prevention of sexual violence will increase (Asfar, 2018).

Research has been conducted discussing the existence of most influences on the utilization of electronic mass media audio visuals that influence the character formation of students more critically in addressing and targeting problems occurring in Environment (Van Der Merwe, 2011). The school-based sexual abuse prevention program was shown to be acceptable, feasible and efficacious in improving sexual abuse prevention knowledge and skills of female children. (Warratch et al., 2020). Heightened reactivity to emotions paired with an immature emotional regulatory capacity and susceptibility to peer influence have all been cited as causing adolescent behavior problems (Madrid et al., 2020). It seems that integrating emotion regulation skills training with educational components might bring about more effective prevention of sexual abuse. In a study of college students, Walsh and colleagues found that those with poor emotional regulation, (meaning they have difficulty acknowledging and accepting emotional states), may also have difficulty recognizing feelings of discomfort, fear, or distress. Because of this, it is likely that they miss out on an internal signal that there is a need to escape a risk situation (Madrid et al., 2020).

The maturity of good emotions is the ability and capacity of individuals to respond and control emotions well critically to solve

the challenges of life (Permatasari, 2017). The results of the post-test group treatment showed that most respondents had a high level of emotional maturity. This is also in line with the results of research discussing the prevention of sexual violence through an overview of children's understanding shows that boys are easier to understand sexual education than girls (Permatasari, E., 2017). Girls have an easy nature feel uncomfortable if others have trouble, so that can be used as a profit for the perpetrators of violence to deceive the child in doing the action.

Based on the changes in the level of the emotional maturity of the child's greatest emotion is the understanding of the mental crisis in the treatment group, experiencing the highest increase compared to other emotions maturity characteristics. The use of mental crisis functions in individuals is said to be good when individuals have an objective thinking in understanding the condition of the circled state, and before revealing the emotions in themselves (Moshahid, 2017). This affects the child to be able to use his mental crisis function, which is to think in a sense and understand his perceived feelings in him when confronting the situation in real life. The mini movie discussing how to control emotions in an effort to prevent sexual violence provides an adaptive response to the increase in child emotion maturity on the guilt of behavior of sexual violence occurring around (Tangney, 2004).

## **Conclusion**

Mini movie media becomes a mass approach in modern era that can provide accurate information in delivering health messages for children. Education using mini movie media can improve children's self-control so as to prevent sexual violence behavior on children. Teachers at school and parents at home can use interesting and easily accessible media to increase children's knowledge about preventing sexual violence.

Would like to express my gratitude with a genuine heart to all respondents and parents/guardians who have been willing to take the time to participate in this research.

## References

- Abaraogu, U. O., Onah, U., Abaraogu, O. D., Fawole, H. O., Kalu, M. E., & Seenan, C. A. (2019). Knowledge, attitudes, and the practice of health promotion among physiotherapists in Nigeria. *Physiotherapy Canada, 71*(1), 92–100. <https://doi.org/10.3138/ptc.2017-79.gh>
- Andriani, S., Ardianto, D. T., & Srisanto, E. (2017). Perancangan animasi 2d sebagai antisipasi kekerasan seksual pada anak usia 10 – 12 Tahun. (2d Animation Design as Anticipation of Sexual Violence in Children Age 10 – 12 Years). *Jurnal Desain Komunikasi Visual Adiwarna*.
- Asfar, A. (2018). Pengaruh Penyuluhan Kesehatan Terhadap Tingkat Pengetahuan dan Sikap Tentang Kesehatan Reproduksi di SMP Baznas Provinsi Sulawesi Selatan. (The Effect of Health Counseling on Knowledge Levels and Attitudes About Reproductive Health at Baznas Junior High School, South Sulawesi Province). *Journal of Islamic Nursing, June*, 0–1. <https://doi.org/10.1016/j.chiabu.2017.06.006>
- Azwar, S. (2015). Sikap Manusia: Teori dan Pengukurannya. (Human Attitude: Theory and Its Measurement). Pustaka Pelajar. Elsevier Inc. <https://doi.org/https://doi.org/10.1016/j.sxmr.2017.12.002>
- Chimeno, S. G., Fernández, J. D., Sánchez, S. M., Ramón, P. P., Ospina, Ó. M. S., Muñoz, M. V., & Hernández, A. G. (2020). *Domestic Violence Prevention System* (pp. 10–14). [https://doi.org/10.1007/978-3-030-00524-5\\_3](https://doi.org/10.1007/978-3-030-00524-5_3)
- Davies, P. L., Segalowitz, S. J., & William, J. (2013). Developmental Neuropsychology Development of Response-Monitoring ERPs in 7- to 25- Year-Olds. *5641*(November), 37–41. <https://doi.org/10.1207/s15326942dn2503>
- Edwards, K. M., Banyard, V. L., Sessarego, S. N., Waterman, E. A., Mitchell, K. J., & Chang, H. (2019). Evaluation of a Bystander-Focused Interpersonal Violence Prevention Program with High School Students. *Prevention Science, 20*(4), 488–498. <https://doi.org/10.1007/s11121-019-01000-w>
- Fong, H., Bennett, C. E., Mondestin, V., Scribano, P. V., Mollen, C., & Wood, J. N. (2017). The Impact of Child Sexual Abuse Discovery on Caregivers and Families: A Qualitative Study. *Journal of Interpersonal Violence* <https://doi.org/10.1177/0886260517714437>
- Franke, S., Kalweit, C., Frey, A., Heddergott, H., Mitschke, A.-C., Wehrmeyer, M., Heinrichs, N., & Kröger, C. (2019). [Victims of Acts of Violence during the Procedure of the Victim Reparation Law - Characteristics of the Affected, Acts, Perpetrators and Predictors for the Period Until Claim of Help Provided by Law]. *Psychotherapie, Psychosomatik, Medizinische Psychologie, 69*(3–04), 105—113. <https://doi.org/10.1055/a-0601-6701>
- Handayani, L. (2017). Pengaruh Pendidikan Kesehatan Dengan Media Video Terhadap Tingkat Pengetahuan Tentang Pencegahan HIV/AIDS di SMA Negeri 1 Parigi Kabupaten Pangandaran. unisayogya. (The Effect of Health Education with Video Media on the Level of Knowledge about HIV/AIDS Prevention in SMA Negeri 1 Parigi, Pangandaran Regency). *Journal of Nursing, 2*. <https://doi.org/10.1016/j.childyouth.2018.03.040>
- Hurlock, E. B. (1999). *Psikologi Perkembangan: Suatu Pendekatan Sepanjang Ruang kehidupan* (5th ed.). (Developmental Psychology: An Approach Throughout Life's Space (5th ed.)). Erlangga.
- Koçtürk, N., & Yüksel, F. (2019). Characteristics of victims and perpetrators of intrafamilial sexual abuse. *Child Abuse & Neglect, 96*, 104122. <https://doi.org/10.1016/j.chiabu.2019.104122>
- Komisi perlindungan anak Indonesia. (2015). *Video Katakan Tidak*. Retrieved March 20, 2020, from <https://www.youtube.com/watch?v=FsCGDx2SP9k&feature=youtu.be>
- Louboutin, J.-P., & Gardner, M. (2013).

- Decision-making in adolescents: *Neuroanatomical basis and consequences for cognitive competence and risk-taking behaviors*. In P. Braschi (Ed.), *Psychology of Judgment* (pp. 1–46). Nova Science Publishers, Inc.
- Madrid, B. J., Lopez, G. D., Dans, L. F., Fry, D. A., Duka-Pante, F. G. H., & Muyot, A. T. (2020). Safe schools for teens: preventing sexual abuse of urban poor teens, proof-of-concept study - Improving teachers' and students' knowledge, skills and attitudes. *Heliyon*, 6(6). <https://doi.org/10.1016/j.heliyon.2020.e04080>
- McKibbin, G., Humphreys, C., & Hamilton, B. (2017). "Talking about child sexual abuse would have helped me": Young people who sexually abused reflect on preventing harmful sexual behavior. *Elsavier Child Abuse and Neglect*, 70(June), 210–221. <https://doi.org/10.1016/j.chiabu.2017.06.017>
- Moshahid, M. (2017). Emotional maturity and academic achievement of B.Ed students : A co-relational study. *International Journal of Advanced Research and Development*, 2(3), 133–136.
- Novianty, L., Suryani, S., & Sriati, A. (2015). Analisis Dukungan psikososial yang dibutuhkan keluarga dengan anak yang mengalami kekerasan seksual. (Analysis of Psychosocial Support Needed by Families with Children who experience Sexual Violence). *Jurnal Keperawatan Padjadjaran*, 3(3). <https://doi.org/10.24198/jkp.v3i3.115>
- Nursalam, S. (2013). *Metodologi penelitian ilmu keperawatan pendekatan praktis. (Nursing Research Methodology Practical Approach)*. Salemba Medika.
- Pereda, N., Guilera, G., Forns, M., & Gómez-Benito, J. (2009). The prevalence of child sexual abuse in community and student samples: A meta-analysis. *Clinical Psychology Review*, 29(4), 328–338. <https://doi.org/10.1016/j.cpr.2009.02.007>
- Permatasari, E., S. G. A. (2017). Gambaran Pemahaman Anak Usia Sekolah Dasar Tentang pendidikan seksual dalam upaya Pencegahan kekerasan seksual pada anak. (Overview of Elementary School age children's understanding of zexual education in efforts to prevent sexual violence in Children). *The Indonesian Journal of Health Science*, 9(1).
- PKPA. (2015). *Katakan tidak. (say No)*. Retrieved March 20, 2020, from <https://docplayer.info/62121971-Ringkasan-laporan-tahunan-pusat-kajian-dan-perlindungan-anak-pkpa.html>
- Reuter, K., MacLennan, A., Le, N., Unger, J. B., Kaiser, E. M., & Angyan, P. (2019). A Software tool aimed at automating the generation, distribution, and assessment of social media messages for health promotion and education research. *JMIR Public Health and Surveillance*, 5(2), e11263. <https://doi.org/10.2196/11263>
- Runarsdottir, E., Smith, E., & Arnarsson, A. (2019). The effects of gender and family wealth on sexual abuse of adolescents. *International Journal of Environmental Research and Public Health*, 16(10), 1788. <https://doi.org/10.3390/ijerph16101788>.
- Setiawan, D. (2018). *KPAI: Kekerasan seksual anak laki-laki meningkat. (KPAI: Boys Sexual Violence Rises)*. Retrieved March 20, 2020, from <https://www.kpai.go.id/berita/kpai-kekerasan-seksual-anak-laki-laki-meningkat>
- Solehati, T., Rahmat, A., Kosasih, C. E., & Hidayati, N. O. (2018). Relationship between ge, gender and peer group with reproductive healthy behaviour of teen. *Jurnal Keperawatan Padjadjaran*, 6(2). <https://doi.org/10.24198/jkp.v6i2.643>
- Tangney, J. P. et al. (2004). High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success. *Journal of Personality*, October. <https://doi.org/10.1016/j.wsif.2018.04.004>
- Tutty, L. M. (1995). The revised Children's Knowledge of Abuse Questionnaire: Development of a Measure of Children's

- Understanding of Sexual Abuse Prevention Concepts. *Journal Consulting and Clinical Psychological*, 19.
- UNICEF. (2014). *Video Kisah Si Geni*. (Geni's Story Video). Retrieved March 20, 2020, from <https://www.youtube.com/watch?v=z2ajcg-KTY&feature=youtu.be>
- UNICEF. (2018). *Mengakhiri Kekerasan terhadap Perempuan dan Anak di Indonesia*. (Ending Violence against Women and Children in Indonesia). Retrieved from March 3, 2020, from <https://www.kemenpppa.go.id/lib/uploads/list/71ad6-buku-ktpa-menegpp-2017.pdf>
- Van Der Merwe, P. (2011). A school-based socio-emotional programme as strategy against crime and violence. *Tydskrif Vir Geesteswetenskappe*, 51(3), 388–402.
- Vives-Cases, C., Davo-Blanes, M. C., Ferrer-Cascales, R., Sanz-Barbero, B., Albaladejo-Blázquez, N., Sánchez-San Segundo, M., Lillo-Crespo, M., Bowes, N., Neves, S., Mocanu, V., Carausu, E. M., Pyżalski, J., Forjaz, M. J., Chmura-Rutkowska, I., Vieira, C. P., & Corradi, C. (2019). Lights4Violence: a quasi-experimental educational intervention in six European countries to promote positive relationships among adolescents. *BMC Public Health*, 19(389). <https://doi.org/10.1186/s12889-019-6726-0>
- Wahyuningtyas, P. (2017). Pengaruh Pemanfaatan Media Massa Elektronik Audiovisual Terhadap Karakter Peserta Didik Kelas IV Mi Al-Jihad Karanggebang Jetis Ponorogo Tahun Pelajaran. ( The Influence of the Use of Audiovisual Electronic Mass Media on the Characters of Class IV Students of Mi Al-Jihad Karanggebang Jetis Ponorogo Academic Year). *Jurnal Kependidikan Dan Kemasyarakatan*, 1–107.
- Warraitch, A., Amin, R., & Rashid, A. (2020). Evaluation of a school-based sexual abuse prevention program for female children with intellectual disabilities in rural Pakistan- a feasibility study. *Applied Nursing Research*, 151391. <https://doi.org/10.1016/j.apnr.2020.151391>
- Wheeler, A. J., & McElvaney, R. (2017). “Why would you want to do that work?” The positive impact on therapists of working with child victims of sexual abuse in Ireland: a thematic analysis. *Counselling Psychology Quarterly*, 1–15. <https://doi.org/10.1080/09515070.2017.1336077>

## The Nurses' Experience during the Caring of Coronavirus (COVID-19) Patients: A Descriptive Qualitative Study

Indah Sri Wahyuningsih<sup>1</sup>, Fitria Endah Janitra<sup>2</sup>, Rebriarina Hapsari<sup>3</sup>, Sarinti Sarinti<sup>4</sup>,  
Muhammad Mahfud<sup>5</sup>, Failasuf Wibisono<sup>6</sup>

<sup>1,2</sup>Faculty of Nursing, Islamic Sultan Agung University, Semarang, Indonesia

<sup>3</sup>Faculty of Medicine, Diponegoro University, Semarang, Indonesia

<sup>4</sup>Critical Care Nurse, Tugurejo Hospital, Semarang, Indonesia

<sup>5</sup>Emergency Nurse, Islamic Sultan Agung Hospital, Semarang, Indonesia

<sup>6</sup>Critical Care Nurse, Roemani Muhammadiyah Hospital, Semarang, Indonesia

*Corresponding Email: indah.unissula@gmail.com*

Submitted: 20-11-2020 Accepted: 21-12-2020 Published: 27-12-2020

### Abstract

COVID-19 transmission in the hospital environment can be catalized by a direct contact and droplets. Nurses are at the forefront of having the longest contact with the infected patient during the treatment. This research aims to dig on the deep meaning on the nurses' practice during treating the COVID-19's patients. This is a qualitative research design with a descriptive explorative approach. The sampling technique used in this research was a purposive side. The Data collection were carried out on five nurses who were in charge of caring the COVID-19 patients at two Semarang city's hospitals. The research data were in the form of conversation transcripts which were analyzed using content analysis. This qualitative research analysis brought the results in three themes: first, the challenge of being a COVID-19 nurse in the emergency room, ICU and Covid care room, second, the resilience and resilience of nurses, third, the professionalism of nurses. This study indicate that the experience of nurses caring for COVID-19 patients has many challenges, namely fatigue, discomfort, anxiety, fear of contracting and stress. Anxiety creates psychological problems for nurses, which reduces the quality of service during the pandemic. Resilience and toughness are the main foundations for nurses during the pandemic. There is a need for further research with qualitative methods to look at the factors that impact on successful nursing care in COVID-19 patients during the pandemic.

**Keywords:** COVID-19 patients, professionalism, self toughness, the nurses's challenge.

## Introduction

Corona viruses 2019 (COVID-19) is caused by SARS-CoV-2 infection) (Chen et al., 2020). COVID-19 have been diagnosed in Wuhan since December 2019, with a total of 101,927 confirmed in March 2020. The number of patients infected with COVID-19 continues to increase in several countries, one of the countries with the COVID-19 pandemic case is Indonesia. The number of confirmed COVID-19 cases continued to grow; 4,241, 3509 treated with a total of 373 positive cases and 359 recoveries (Satgas Penanganan COVID-19, n.d.).

The transmission of medical personnel from COVID-19 comes from nosocomial infections that are obtained from the hospital environment from a direct contact and droplets. One of the chains of transmission of the COVID-19 virus infection is through human-to-human transmission and droplets, not all hospitals have sufficient equipment for personal protection. The number of patients infected with the virus continues to grow rapidly in Wuhan, China (Wu et al., 2020). Most of the patients infected with COVID-19 with symptoms of fever and cough are followed by shortness of breath, fatigue, joint pain, dyspnea, dizziness and diarrhea (Chen, Lai, & Tsay, 2020). The limited number of personal protective equipment causes the spread of the Corona virus to occur in health workers who treat COVID-19 patients. The data shows that as of April 14, 2020, there were 28 doctors died and 13 nurses died while handling COVID-19. However, there are challenges that must be faced by health workers, namely the emergence of a stigma in Indonesia that there is rejection of doctors and nurses in their homes because they are considered the source of the virus. The existence of this can cause other problems among professionals is depression and feeling useless (Gunawan, Juthamane, & Aunguroch, 2020). This is opposite to the role of nurse as vanguard during the pandemic.

Nurses are health professionals who are at the forefront of dealing with COVID-19 patients who work in acute care rooms, home care, schools, communities and government-owned health practices (Chen et al., 2020).

Nurses have multiple roles and functions during the COVID-19 pandemic. The role and function of nurses is indispensable during a pandemic. Nurses need to have special skills in caring for COVID-19 patients during the pandemic. In essence, COVID-19 patients need supportive care, especially the expertise, knowledge, attitudes and skills of nurses (Karimi et al., 2020). Lack of health facilities and personnel creates confusion in providing care for patients. The transmission of COVID-19 is very fast and widespread, thus, the consequence is that health workers must be strong in treating patients. Nurses as the frontline have a greater risk of contracting the COVID-19 disease. Doctors and nurses as vanguards who do not have special expertise in caring for infectious patients have great challenges in caring for patients and working adjustment in pandemic situations (Liu et al., 2020). This study aims to explore the meaning and meaning in depth about the experiences of nurses while caring for COVID-19 patients.

## Method

This research design was under the qualitative method with a descriptive explorative approach. The process of descriptive explorative methodology includes four steps: bracketing, intuiting, analyzing, and describing (Polit & Hungler, 2012). This study involves at nurses' experiences while caring for COVID-19 patients. The sampling technique in this study was purposive sampling with the inclusion criteria of nurses who were assigned to care for COVID-19 patients, were willing to be interviewed and agreed to be research participants. Sampling is not sufficient in one data collection; however, it is carried out until the saturation of the data is obtained. The study was conducted from 20 May to 21 June 2020 with participants being nurses at the Semarang City Hospital. Participants who were interviewed were 5 nurses caring for COVID-19 patients. Ethics approval was obtained from the Human Ethics Committee of Sultan Agung Islamic Hospital.

The data has been written can be written completely in accordance with the results of interviews with respondents, to ensure the

trustworthiness researchers use triangulation techniques. It has using data checking techniques in the data collection process in order to show a degree of trust. Researchers used this technique by returning the interview data that had been processed by the researcher to the participants. The data was submitted of participants become checked again in order to obtain a conformity between the written interview data and the participants' perceptions.

Researchers explored the participants using semi-structured questions. Interviews were conducted for each participant with a duration of between 50- 70 minutes. In-depth interviews were conducted with telecommunications media and did not meet face-to-face and had the consent of the participants. Interviews were conducted with telecommunications media by adjusting the participants' spare time.

The researcher wrote the results of the interview and documented it in the form of a transcript which was then analyzed using content analysis. The main questions posed to participants included; describing their experience while treating patients with COVID-19, then interviews are conducted

based on answers from participants, in-depth questions such as, "Whats next", "could you can explain". Although the various questions were carried out in depth from the answers of the participants, the researchers still conducted interviews according to the guidelines so that the questions remained in accordance with the desired objectives.

The results of interviews with participants were analyzed using content analysis. Content analysis consists of making a transcript of the nurse's conversation with the patient, determining the meaning of each unit to look for relationships between words, sentences or paragraphs, and then abstracting the data to form several themes. The implementation of this qualitative research was using ethical principles of research.

## Results

### Characteristics of Participants

As shown in Table 1. The participants of this study were 5 nurses; 3 men and 2 women with a mean age of  $31.8 \pm 6.91$  and work experience of  $8 \pm 5.34$  (Table 1).

**Table 1** Characteristic of Partisipants

Number of partisipants	Age	Sex	Level of Education	Ward	Work Experience	Position
P1	24 years	Female	Bachelor	ICU	2 years	Nurse
P2	35 years	Female	Bachelor	Emergency	10 years	Nurse
P3	29 years	Male	Bachelor	ICU	5 years	Nurse
P4	29 years	Male	Bachelor	Infectious	7 years	Nurse
P5	42 years	Male	Bachelor	ICU	16 years	Nurse
M±SD	31.8±6.91	-	-	-	8±5.34	-
Total	N=5					

The results of the research analysis produced three themes and eight sub theme from the participants. The first theme of this research is the challenge of being a COVID-19 nurse in the emergency room, ICU and COVID care room, the second is the resilience and resilience of nurses, the third is the professionalism of nurses. The following is an explanation of the research analysis:

The first theme is the challenge of being a COVID-19 nurse in the emergency room, ICU and Covid care room.

The nurse who is caring for COVID-19 patients has several experiences. Participants explained that caring for COVID-19 patients presented physical and psychological challenges.

#### Sub theme 1.1: Uncomfortable feeling

Data analysis shows that nurses caring for COVID-19 patients have experiences with high levels of stress and anxiety. The data shows that nurses experience psychological distress. Participants said that serving in the

Covid team must always think positively, because each task must see patients who experience shortness of breath. In essence, participants also felt short of breath when they had to be on duty and wore level 3 personal protective equipment.

"... yes it is tight ma'am, but yes, when I am emptying, I try to sit down ma'am" (P1)

Another participant also revealed,

"I felt dizzy, I felt so hot when I used hazmat that I started to sweat, even though in an air-conditioned room ..." (P5)

### **Sub theme 1.2: Overloaded work**

Analysis of the data shows that nurses caring for COVID-19 patients feel very tired. Nurses are tasked with providing full nursing care because of the level of dependence of COVID-19 patients. The limited number of nurses on the Covid team and the increasing number of patients caused nurses to experience fatigue because they had to provide complete nursing care.

One of the participants said "... it was very tiring, my chest was pounding and I felt dizzy, when I took a patient to Radiology wearing a hazmat suit ..." (P3)

Other participants also said that the Covid team always went home beyond shifts because they had to meet the patient's basic needs such as helping to feed, giving medication, because no family was waiting.

"... our patients are always full ma'am, every time shift 1 the nurse holds 3 to 4 patients with a high level of dependence ..." (P4).

### **Sub theme 1.3: Adequacy of personal protective equipment (PPE)**

Data analysis showed that nurses experienced limitations in the need for PPE use. Participants said that in using PPE, efforts were made to be economical so as not to be wasteful. In addition, in pandemic conditions, the use of N95 masks can be reused after taking action as long as they are not wet.

"... Yes ma'am, so as not to be wasteful of N95 masks, which are said to cost hundreds of thousands ..." (P3)

"... at our place in the ICU, after wearing the N95 mask, you can store the mask, put the prepared paper bag and mark the paper

bag so you don't beat other friends." (P1)

"... Alhamdulillah, in our emergency room, the PPE is still sufficient even though the number of PDP patients is increasing" (P2)

### **The second theme is self-resilience**

The experience of the participants shows that as a frontline nurse you must be mentally and physically prepared. Participants said they had to be well-nourished and rested even though the activities were very high and tiring. In essence, during the pandemic, the use of PPE is in accordance with the established protocol, the participants are committed to their work as the vanguard, so that in wearing PPE they always comply with the correct wear and take off protocol.

### **Sub theme 2.1 The effect of the PPE material so thin**

Participants explained that as a frontline nurse, using PPE is very important while caring for COVID-19 patients. The availability of PPE is made of thin material so that during the disinfecting process, the liquid enters the PPE and the clothes that wear get wet. It makes nurses still have to be strong during a pandemic. The participants explained as follows:

"... Yes ma'am, if you get the thin one, wow if you want to spray disinfectant at the end, it will enter the part of his official shirt ..." (P1)

### **Sub theme 2.2 Increase self resilience and immunity while caring patient**

Nurses need self resilience and toughness during treatment for patients so they need vitamins and supplements after caring patients. It was explained by the participants as follows:

"... drinking enough warm water, incidentally honey and vitamin supplements are available so that they can meet the needs of the body" (P5)

### **The third theme is the professionalism of nurses**

Success in treating patients is indicated by good or professional work performance. Participants said that while caring for COVID-19 patients, good collaboration

between teams is needed so that collaboration can be provided in providing nursing care to patients. Participants said that when treating Covid patients, they must be able to work together with the team. For example, when caring for patients in the ICU, peer collaboration is needed so that the patient's basic needs are met.

### **Sub theme 3.1 Collaboration of team**

The good quality of nursing service is supported by teamwork in providing services for the basic needs of patients. It was explained by the participant as follows:

"...We are a team, such as guarding the six of them, so two friends meet the basic needs of the patient in the isolation room, two more nurses are outside as operators are monitoring the program from CCTV, and two outside nurses are in charge of completing the nursing documentation". (P4)

### **Sub theme 3.2 sympathy and concern between team**

When installing PPE, assistance between colleagues is also needed to make it suitable in using PPE. Peer support is also needed during the COVID-19 pandemic. Participants feel they get support from friends so that

"... after doing the program in the patient's room, when I came out and cleaned up, I was so touched that my boss made me a drink of warm honey (P5).

"When wearing and taking off the hazmat suit, friend and others help each other when wearing it ...". (P1)

### **Sub theme 3.3 Communication between team**

Professionalism in nursing services need good communication between teams in order to achieve quality of service. During a pandemic, a special team is needed to communicate in caring COVID-19 patients. It was explained by the participants as follows:

"... it is very important to learn nursing management on respiratory system problems like COVID-19, ma'am, we have a covid task force team as a forum for communication during a pandemic" (P2).

## **Discussion**

This research is a type of qualitative research conducted during the COVID-19 pandemic. This study describes the experience of nurses caring for COVID-19 patients in the emergency room, ICU and Covid inpatient rooms. The results showed that as a COVID-19 nurse in the emergency room, ICU and Covid care room, there were many challenges, including feelings of discomfort, overloading of work and adequacy of PPE. The results showed that nurses felt uncomfortable and anxious while caring for COVID-19 patients due to the increasing number of patients identified with Covid with symptoms of shortness of breath. The increasing number of patients which increases every day causes an increase in the workload of nurses. The pandemic period in China resulted in a lack of critical nurses caring for COVID-19 patients, less logistical problems such as a lack of personal protective equipment such as gloves, eye protection, gowns and disposable instruments (Xie et al., 2020). In essence, the job of nurses with a high burden, consequently, the patient will also be less in his care (Ross, Bevans, Brooks, Gibbons, & Wallen, 2017).

The results of the analysis of this study also stated that the high workload due to additional service hours was a challenge for nurses in the frontline. This is in line with the problems that occurred in Barcelona during the pandemic, nurses were scheduled to be more monthly by postponing the proposed leave schedule, the hospital recruiting new nurses who have expertise and experience in critical nursing (Raurell-Torreda, 2020). Nurses in China during the pandemic also experienced a change in hours during service, namely an additional one hour per shift (Huang, Lin, Tang, Yu, & Zhou, 2020). An increase in workload during a pandemic has an impact on the emergence of psychological problems for health workers. Nurses, doctors and staff in hospitals face enormous pressure during their duties in caring the patient. A heavy workload is a major factor in stress and other psychological problems. The rapid increase in the number of patients causes the workload of nurses to increase and the occurrence of

fatigue in nurses. A heavy workload often creates other problems for nurses including headaches, difficulty sleeping and high blood pressure (Chow et al., 2020).

The result this study also showed that nurses caring for COVID-19 patients felt tired while on duty, the participants explained that their working hours always exceeded their service time because they helped the patient's basic needs so they always went home not on time. This fatigue causes dizziness, palpitations, anxiety and stress during work. Another study said that the high workload of nurses causes nurses to make mistakes in providing nursing care to patients, due to rushing to take nursing action, wearing personal protective clothing, fear of contracting, stress and anxiety that dominate the work environment (Galedar, Toulabi, Kamran, & Heydari, 2020).

Nurses caring for COVID-19 patients have different experiences and perceptions. Individual perceptions may be different, because the stimulus received by each individual is not the same. Feelings, thinking abilities, experiences that are owned by individuals which different so that in understanding the stimulus, each individual will be different (Wulandari & Ismail, 2019). This makes different perspectives a natural thing to happen, so a communication forum between teams is needed during a pandemic. Communication skills are important and must be continuously improved by every nurse, so that they become a habit in carrying out their duties in providing health services in hospitals (Emaliyawati, Widiasih, Sutini, Ermiati, & Rahayu, 2020). The results of this study indicate that participants need good communication between teams while caring for COVID-19 patients in order to achieve quality nursing care. The communication method that can be carried out during a pandemic is telecommunications

Health workers need telecommunications virtually to overcome psychological problems. Symptoms that appear in most health workers are fatigue and fatigue of the mind. Health workers working in isolation rooms are worried that they will catch COVID-19 patients. During the SARS epidemic, some health workers were infected (Schwartz, King, & Yen, 2020). Health workers need

psychoeducation to deal with post-traumatic problems, anxiety and depression during a pandemic (Ornell, Halpern, Paim Kessler, & de Magalhães Narvaez, 2020). The problem that arises among health professionals in Indonesia is that doctors and nurses feel there is a stigma in society that considers health professionals to be the source of the virus. In addition, health workers, namely doctors and nurses, feel useless and depressed because they felt not appreciated (Gunawan et al., 2020).

This is also in line with the results of this study where fatigue is a challenge for nurses caring for COVID-19 patients during the pandemic. Participants conveyed that they were tired because of wearing thick personal protective clothing and it can cause difficulty breathing. The existence of psychological pressure and social burdens experienced by health workers when treating patients is very necessary for policy makers to pay attention to, so that health workers receive physical and psychological support to prevent the spread and manage the transmission of this disease outbreak in the scope of health workers (Chen et al., 2020). In line with the findings of this study, other studies have shown that an increase in the number of patients during the COVID-19 pandemic has resulted in nurses working hours increasing by about 1.5-2 times than normal. Apart from increasing working hours, the workload has also increased (Liu et al., 2020).

Data analysis on the second theme of the study is the self-resilience of nurses in caring for COVID-19 patients. Nurses as the vanguard must be able to manage themselves well during a pandemic. The problem often faced by nurses in the vanguard is anxiety. Anxiety will lead to infection, stress with workload, depression and fear of nurses which will lead to the transmission of infection to the family. In addition, during this pandemic, nurses are required to maintain their resilience as the frontline by using personal protective equipment (PPE) (Al Thobaity & Alshammari, 2020). The results showed that the participants were always committed to adherence to using PPE while treating COVID-19 patients. During a pandemic, the use of PPE needs to be regulated so that

it is always sufficient. The use of PPE is adjusted to the correct PPE usage protocol or technical guidelines. Several research results show that COVID-19 is transmitted through close contact and droplets. Health workers can protect themselves while caring for patients by complying with infection control and prevention practices with the use of proper personal protective equipment (Wibowo, Bambang, Widyastoeti, Tri Hesty, Satari, 2020). However, the use of personal protective clothing or hazmat suits in this study shows that there is a problem related to the thin hazmat base material that will cause nurses to feel uncomfortable because when disinfecting is sprayed sometimes it gets into the nurse's official clothes. The results of this study are in line with other qualitative research which states that there is inadequate access to nurse protective clothing such as damage to personal protective clothing (Galedar et al., 2020). Personal protective equipment that is used while treating patients required thick material but comfortable to use. If the quality of the material is good, it will have a positive impact, namely a sense of comfort at work so that it does not overheat while working. The feeling of comfort will make nurses enthusiastic and not easily tired because the materials used are not hot.

The results of data analysis on the third theme of this study are the professionalism of nurses. The results showed that cooperation and support between peers was needed during the COVID-19 pandemic to have an important role in the self-development of nurses. With good teamwork, patients will get satisfaction from the care that has been provided by the health team. Providing less nursing care will have an impact on patient satisfaction in getting services at the hospital. Nurse support is able to bring out good experiences in patients while being treated (Lake, Germack, & Viscardi, 2017). The importance of teamwork in patient care will make teamwork effective and a major component in improving the quality of health services (Findyartini et al., 2019). Having a nurse professional attitude is an important opportunity for nurses during this pandemic. Data analysis shows that every nurse needs to know nursing care for patients with respiratory problems such as COVID-19. The

existence of this pandemic incident made nurses have positive experiences and became responsible for being able to contribute to society. This is evident from qualitative research which states that even though they are under psychological pressure, nurses still provide the best nursing care and feel very touched when the patients they treat are cured (Karimi et al., 2020).

The condition of the COVID-19 pandemic is an opportunity for nurses to develop professional nursing science in a way of loving each other, respecting the profession, giving thanks to the people around them and active cooperation during patient care with COVID-19 (Sun et al., 2020). Research analysis shows that nurses need full support from policy makers in order to provide health services during a pandemic by providing financial support and spiritual support so that health workers get good protection.

## **Conclusion**

The results of this study indicate that the experience of nurses caring for COVID-19 patients has many challenges, namely fatigue, discomfort, anxiety, fear of contracting and stress. Anxiety creates psychological problems for nurses, which reduces the quality of service during the pandemic. Resilience and toughness are the main foundations for nurses during the pandemic. The number of COVID-19 patients, which continues to increase every month, has made health centers, especially nurses, can take advantage of opportunities by increasing professionalism in providing nursing care to COVID-19 patients. The role of policy holders is very necessary to be able to facilitate nurses such as virtual psychoeducation, meeting the needs for adequate personal protective equipment, procurement of it with basic materials that are comfortable and not hot so that nursing care to COVID-19 patients properly.

The limitation in this study is that data collection is done face-to-face online, and cannot meet in person due to the implementation of strict health protocols during the pandemic period. However, researchers are trying to be able to foster

communication with participants through taking data by telephone and there is evidence of conversation transcripts so that the research can still be carried out effectively. There is a need for further research with qualitative methods to look at the factors that affect nursing care in COVID-19 patients during the pandemic.

## References

- Al Thobaity, A., & Alshammari, F. (2020). nurses on the frontline against the COVID-19 pandemic: An integrative Review. *Dubai Medical Journal*, 3(3), 1–6. <https://doi.org/10.1159/000509361>
- Chen, S. C., Lai, Y. H., & Tsay, S. L. (2020). Nursing perspectives on the impacts of COVID-19. *Journal of Nursing Research*, 28(3), 1–5. <https://doi.org/10.1097/NRJ.0000000000000389>
- Chen, Zhou, Dong, Qu, Gong, Han, Y., ... Zhang, L. (2020). Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *The Lancet*, 395(10223), 507–513. [https://doi.org/10.1016/S0140-6736\(20\)30211-7](https://doi.org/10.1016/S0140-6736(20)30211-7)
- Chow, K. M., Law, B. M. H., Ng, M. S. N., Chan, D. N. S., So, W. K. W., Wong, C. L., & Chan, C. W. H. (2020). A review of psychological issues among patients and healthcare staff during two major coronavirus disease outbreaks in China: Contributory factors and management strategies. *International Journal of Environmental Research and Public Health*, 17(18), 1–17. <https://doi.org/10.3390/ijerph17186673>
- Emaliyawati, E., Widiasih, R., Sutini, T., Ermiati, E., & Rahayu, U. (2020). Nurses' Reflections on Challenges and Barriers of Communication in the Intensive Care Unit: A Phenomenology Study. *Jurnal Keperawatan Padjadjaran*, 8(1), 65–73. <https://doi.org/10.24198/jkp.v8i1.1190>
- Findyartini, A., Kambey, D. R., Yusra, R. Y., Timor, A. B., Khairani, C. D., Setyorini, D., & Soemantri, D. (2019). Interprofessional collaborative practice in primary healthcare settings in Indonesia: A mixed-methods study. *Journal of Interprofessional Education and Practice*, 17, 100279. <https://doi.org/10.1016/j.xjep.2019.100279>
- Galedar, N., Toulabi, T., Kamran, A., & Heydari, H. (2020). Exploring nurses' perception of taking care of patients with coronavirus disease (COVID-19): A qualitative study. *Nursing Open*, 8(1), 171–179. <https://doi.org/10.1002/nop2.616>
- Gunawan, J., Juthamane, S., & Aunguroch, Y. (2020). Current Mental Health Issues in the Era of Covid-19. *Asian Journal of Psychiatry*, 51(April), 1–3. <https://doi.org/10.1016/j.ajp.2020.102103>
- Huang, L., Lin, G., Tang, L., Yu, L., & Zhou, Z. (2020). Special attention to nurses' protection during the COVID-19 epidemic. *Critical Care*, 24(1), 10–12. <https://doi.org/10.1186/s13054-020-2841-7>
- Karimi, Z., Fereidouni, Z., Behnammoghadam, M., Alimohammadi, N., Mousavizadeh, A., Salehi, T., ... Mirzaee, S. (2020). The Lived Experience of Nurses Caring for Patients with COVID-19 in Iran: A Phenomenological Study. *Risk Management and Health Care Policy*, 13, 1271–1278. <https://dx.doi.org/10.2147%2FRMHP.S258785>
- Lake, E. T., Germack, H. D., & Viscardi, M. K. (2017). sectional study of US hospitals. *BMJ Quality & Safety*, 25(7), 535–543. <https://doi.org/10.1136/bmjqs-2015-003961>. Missed
- Liu, Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., ... Yang, B. X. (2020). The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. *The Lancet Global Health*, 8(6), e790–e798. [https://doi.org/10.1016/S2214-109X\(20\)30204-7](https://doi.org/10.1016/S2214-109X(20)30204-7)
- Ornell, F., Halpern, S. C., Paim Kessler, F. H., & de Magalhães Narvaez, J. C. (2020). The impact of the COVID-19 pandemic on the mental health of healthcare professionals.

*Cadernos de Saude Publica*, 36(4). <https://doi.org/10.1590/0102-311X00063520>

Satgas Penanganan COVID-19. Peta Sebaran COVID 19. Retrieved March 24, 2020, from [www.covid19.go.id](http://www.covid19.go.id)

Polit, D. ., & Hungler, B. (2012). *Nursing Generating and Assesing VidenceFor Nursing Practise* (Eight Edit).

Raurell-Torreda, M. (2020). Management of Icu Nursing Teams During the Covid-19 Pandemic. *Enfermeria Intensiva*, 31(2), 49–51. <https://doi.org/10.1016/j.enfi.2020.04.001>

Ross, A., Bevans, M., Brooks, A. T., Gibbons, S., & Wallen, G. R. (2017). Nurses and Health-Promoting Behaviors: Knowledge May Not Translate Into Self-Care. *AORN Journal*, 105(3), 267–275. <https://doi.org/10.1016/j.aorn.2016.12.018>

Schwartz, J., King, C. C., & Yen, M. Y. (2020). Protecting healthcare workers during the Coronavirus Disease 2019 (COVID-19) outbreak: Lessons from Taiwan's severe acute respiratory syndrome response. *Clinical Infectious Diseases : An Official Publication of the Infectious Diseases Society of America*, 71(15), 858–860. <https://doi.org/10.1093/cid/cia255>.

Sun, N., Wei, L., Suling, S., Jiao, D., Song Bsc, R., Ma Msc, L., ... Wang Bsc, H. (2020). Qualitative Study: Experienced of Caregivers During Covid19. *American Journal of Infection Control*, 48(6), 592–598. <https://doi.org/10.1016/j.ajic.2020.03.018>

Wibowo, Bambang, Widyastoeti. Tri Hesty, Satari, H. (2020). *Dokumen resmi 8 april 2020*.

Wu, W., Zhang, Y., Wang, P., Zhang, L., Wang, G., Lei, G., ... Luo, M. (2020). Psychological stress of medical staffs during outbreak of COVID-19 and adjustment strategy. *Journal of Medical Virology*, 92(10), 1962–1970. <https://doi.org/10.1002/jmv.25914>

Wulandari, T. S., & Ismail, S. (2019). Exploring Nurses' Experience of Managing Attention and Mood in Post-Stroke Patients: A Qualitative Study. *Jurnal Keperawatan Padjadjaran*, 7(2). <https://doi.org/10.24198/jkp.v7i2.1000>.

Xie, J., Tong, Z., Guan, X., Du, B., Qiu, H., & Slutsky, A. S. (2020). Critical care crisis and some recommendations during the COVID-19 epidemic in China. *Intensive Care Medicine*, 46(5), 837–840. <https://doi.org/10.1007/s00134-020-05979-7>

## Child Health Problems in Agricultural Setting

Lantin Sulistyorini\*, Peni Perdani J, Ira Rahmawati, Eka Afdi S  
Faculty of Nursing, Universitas Jember, Jember, Indonesia  
*Corresponding Email: lantin\_s.psik@unej.ac.id*

Submitted: 15-07-2020 Accepted: 24-09-2020 Published: 30-12-2020

### Abstract

Besuki Residency well known at agricultural field. Child and infant mortality in this area is high. Child health problems of agricultural-oriented at Besuki Residency no one has research yet. This research uses quantitative methods that are retrospectives that include child health problems since 2017 until 2018. Quantitative method is used to collect data on patient characteristics (gender, disease, nursing problems, and age criteria) and illness to the children's disease based on agricultural that arise due to activities or agricultural climate. The sample included 807 children at seven hospital scattered in several residency areas using quota sampling technic. Data analysis uses confirmatory factor analyze (CFA), with parameter data estimation uses analysis of moment structures. The result of p-values for health problems to gender = 0.033 ( $p < 0.05$ ), health problems to disease = 0.008 ( $p < 0.05$ ), health problems to nursing problems = 0.000 ( $p < 0.05$ ), health problems to age criteria = 0.000 ( $p < 0.05$ ). Fit model value indicates that the model is perfect fit. Child health problems, especially such as pneumonia, diarrhea, and malaria in the agricultural area with an agricultural perspective in the Besuki Residency can affect gender, disease, nursing problems, and age criteria. So that these health problems require specific health interventions or programs according to the characteristics of gender, disease, nursing problems, and age criteria. The nurse should have a mapping of nursing problems and special agriculture-oriented interventions.

**Keywords:** Age criteria, agricultural, child, disease, gender, health problems, nursing problems.

## Introduction

Children are unique individuals whose most periods of life are growing and developing. One of indicator in determining the health status of children is the Infant Mortality Rate (IMR) and Toddler Mortality Rate (TMR). In Indonesia from 1990-2005 there was a lot of progress in reducing IMR and TMR but in the last decade there has been a slowdown, especially has to be juxtaposed with ASEAN, Indonesia is still lagging behind (UNICEF, 2012).

Health problems such as pneumonia, diarrhoea and malaria are still the main causes of child mortality globally. Many children die less than five years of age due to preventable diseases. Whereas in the child's life cycle, the first month of a child's life or the neonatal period is the most dangerous period for children, where most of the causes can be prevented (UNICEF, 2013). Therefore, a preventive effort is needed in mitigating it. One effort to reduce child morbidity and mortality is to perform health maintenance where the initial action that can be taken is to map children's health problems of agricultural-oriented.

Each year, pneumonia causes about 700,000 to 900,000 child deaths worldwide (Troeger et al., 2017). In 2016, the incidence of pneumonia was 13-16% of all deaths in children under 5 years (Troeger et al., 2017). In 2015, the worldwide death burden from pneumonia in several countries: Afghanistan, Angola, Bangladesh, Chad, China, Democratic Republic of the Congo, Ethiopia, India, Indonesia, Niger, Nigeria, Pakistan, Somalia, Sudan and Tanzania reached 70% of all pneumonia deaths worldwide (WHO, 2018). In 2011, as many as 1-3 million cases of pneumonia were fatal, and 81% of these deaths occurred within the first 24 months of life. Child mortality from pneumonia decreases rapidly with age, from about 67% of all deaths at 6 months to 14% at 18 months, and reaching 6% between the ages of 30 and 54 months. The incidence decreased gradually with increasing age, namely around 39% at 6 months, 22% at 18 months, 19% at 30 months, 13% at 42 months, and 7% at 54 months (Walker et al., 2013).

The implementation of integrated

management of under-five sick children (IMCI) has been shown to reduce pediatric morbidity and improve the quality of health services provided to children (Ahmed et al., 2010). The results illustrate that there is suboptimal adherence to the guidelines in various settings (Baiden et al., 2011; Irimu et al., 2012). It is in the context of pneumonia surveillance that the management of pneumonia in children less than 5 years of age in Mozambique, a low-income country with a high mortality rate for children less than 5 years of age and a high burden of disease and death from pneumonia and malaria (Acacio et al., 2015).

Diarrhoea is a major killer of children under five years of age (Walker et al., 2013; Santosham et al., 2010; Pahwa et al., 2010). According to UNICEF (2016a), in 2015 as much as 9% of all deaths were in children under five years of age. This means that more than 1400 children die every day, or about 530,000 children every year from diarrhoea. In 2013 in India diarrhoea caused more than 130,000 child deaths (UNICEF, 2016b). About a quarter of all diarrheal deaths worldwide are in children under the age of five (Liu et al., 2015). Most of the deaths from diarrhoea result from loss of fluids and excess electrolytes that lead to dehydration. Death due to diarrhoea can be avoided with simple medications such as oral rehydration solutions and other fluids available at home, continuous feeding during episodes of diarrhoea and breastfeeding. This treatment is recognized in reducing child mortality and morbidity (Dutta et al., 2016).

So we need a preventive effort to overcome it. One of the efforts to reduce child morbidity and mortality is by carrying out health care where the initial action that can be taken is mapping children's health problems.

## Method

This research uses quantitative methods that are retrospectives that include child health problems since 2017 until 2018. Quantitative method is used to collect data on patient characteristics and illness to the children's disease based on agricultural that arise due to activities or agricultural climate.

The population of the research was inclusion criteria includes pediatric patients who have been treated with major nursing problems from several children diseases based on agricultural in seven hospital in all the Besuki Residency include there are three hospital agricultural, and the others are local hospital that near from agricultural region.

The sample includes secondary data derived from medic record data (n = 807). The sampling technique uses quota sampling.

Data analysis uses confirmatory factor analyze (CFA), with parameter data estimation uses analysis of moment structures (AMOS versi 21) (Byrne, 2013). CFA is an approach used to analyze measurement models. The analysis is intended to reveal how well the measurement indicators measure a latent concept (construct), so as to get a good model.

The CFA test aims to find out how well the measurement indicators measure a latent concept (construct) such as gender, disease, nursing problems, and age criteria and to find out the fit value of the model in Chi-squared, p-value, root mean square error of approximation (RMSEA), and comparative fit index (CFI).

Take from the research ethic committee faculty of dentistry Universitas Jember with number: 503/UN25.8/KEPK/DL/2019 and take informed consent from respondent.

The research instrument uses a medical record to determine health problems such as gender, disease, nursing problems, and age criteria. Data collection techniques include filling in the format of disease number data (table 1).

**Table 1 Data of Children Disease Based on Agricultural**

Item	Disease
<b>Components of children’s disease based on agricultural</b>	
Respiratory disease	Asthma, pneumonia, Airways Respiration Infection (ARI)
Gastrointestinal disease	Diarrhoea, profus vomiting
Skin disease	Dermatitis atopic, scabies, eczema ex herpes simplex / Atopic dermatitis, scabies, eczema ex herpes simplex
Toxicology	Premature babies, babies with congenital disorders, cancer (brain cancer, acute lymphocytic leukemia, and non-Hodgkin lymphoma), zoonosis (filariasis)
Tropical Disease	Thypoid, Dengue Fever, Malaria, Pertussis, Dhyphteri
Growth and development	
<b>Child Characteristics</b>	
Age	
Gender	
Adress	

Table 1 shows that the data on diseases suffered by children in the agricultural area. Most of the diseases that affect children include respiratory diseases, gastrointestinal diseases, skin diseases, poisoning and tropical diseases.

**Results**

Health problems (X1) are measured through 4 aspects of indicators, namely gender (X1.1), disease (X1.2), nursing problems (X1.3), and age criteria (X1.4). Descriptive analysis results can be seen in table 2.

Table 2 shows that the sex is mostly male, the disease caused is mostly ARI, the nursing problem that often arises is mostly hypertension, the age criterion is mostly toddlers.

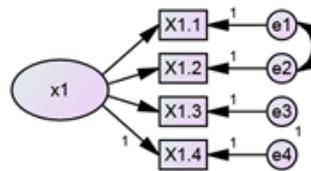
The variable and each indicator are shown in Figure 1.

In figure 2 shows that the estimated significance of the parameters produced by the character of health problems (X1) to gender (X1.1) = 0.089.

Estimation of health problems (X1) to disease (X1.2) = 0.472. Estimation of health problems (X1) to nursing problems (X1.3)

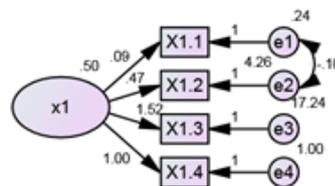
**Table 2 Characteristics of Respondents by Gender, Disease, Nursing Problems, and Children's Age Criteria**

Characteristic	f	%
<b>Gender</b>		
<b>Man</b>	<b>438</b>	<b>54.3</b>
Woman	369	45.7
<b>Disease</b>		
UTI	47	5.8
ARI	363	45.0
Diarrhea	136	16.9
Convulsions	116	14.4
Typhoid	16	2.0
DHF	36	4.5
Blood disorders	35	4.3
Other infections	37	4.6
Congenital disorders	8	1.0
TBC	7	0.9
Another malignancy case	2	0.2
Morbilli	4	0.5
<b>Nursing problem</b>		
Hypertension	378	46.8
Lack of Fluid Volume	61	7.6
The Ineffectiveness of Breathing Pattern	56	6.9
The Ineffectiveness of Clearance air ways	134	16.6
Ineffective Thermoregulation	10	1.2
Constipation	4	0.5
Diarrhea	17	2.1
Comfort Disorders	24	3.0
Risk of injury	9	1.1
Activity intolerance	2	0.2
Acute Pain	64	7.9
Ineffectiveness of Tissue Perfusion	25	3.1
Skin Integrity Damage	1	0.1
Aspiration Risk	1	0.1
Potential Complications of Anemia	1	0.1
Nutrition Needs Less Than Body Needs	16	2.0
Excess fluid	4	0.5
<b>Age Fluid</b>		
Neonatus	13	1.6
Infant	143	17.7
Toddler	280	34.7
Preschool	161	20.0
School	152	18.8
Teenaer	58	7.2



chi-kuadrat = \cmin  
 df = \df  
 p-value = \p  
 RMSEA = \rmsea  
 CFI = \cfi

Figure 1 Hypothesis Model: Confirmatory Factor Analyze: Children Health Problems based on agricultural in Besuki Residency



chi-kuadrat = .501  
 df = 2  
 p-value = .779  
 RMSEA = .000  
 CFI = 1.000

Figure 2 Confirmatory Factor Analyze: Children Health Problems based on Agrocultrual in Besuki Residency

= 1.525. Estimated health problems (X1) to age criteria (X1.4) = 1.000.

**Estimation of Parameter Significance**

Table 3 shows that the result of p-values for health problems (X1) to gender (X1.1) amounted to 0.033 this values <0.05, then gender (X1.1) is expressed a significant as measure construct of health problems (X1).

P-value generated for health problems (X1) to disease (X1.2) amounted to 0.008 this value <0.05, then disease (X1.2) is expressed significant as measure construct of health problems (X1). P-value generated for health problems (X1) to nursing problems (X1.3) amounted to 0.000 this value <0.05, then nursing problems (X1.3) are expressed significant as measure construct of health

Table 3 Estimation of the Significance of Gender Parameter, Disease, Nursing Problem, and Age Criteria

Variables	Estimate	p-value
Health Problems (X1) ----> Gender (X1.1)	0.089	0.033
Health Problems (X1) ----> Disease (X1.2)	0.472	0.008
Health Problems (X1) ----> Nursing Problems (X1.3)	1.525	0.000
Health Problems (X1) ----> Age Criteria (X1.4)	1.000	0.000

## Fit Model Value

**Table 4 Fit Model Value on Chi-square, p-Value, Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI)**

Model	Value
<b>Default Model:</b>	
Chi-square	0.501
P-Value	0.779
RMSEA	0.000
CFI	1.000

problems (X1). P-value generated for health problems (X1) to age criteria (X1.4) amounted to 0.000 this value  $<0.05$ , then age criteria (X1.4) are stated a significant as measure construct of health problems (X1).

### Fit Model Value

Table 4 shows that the Chi-square fit index value generated is 0.501, because it approaches 0 the more fit, it means that the model is fit. The index value of fit p-value generated is 0.779, because  $\alpha = 0.05$ , then fit, it means that the model is fit. RMSEA index fit value generated is 0.000, because  $\leq 0.05$ , then fit, it indicates that the model is fit. CFI fit index value generated is 1,000, because  $> 0.90$  then fit, it indicates that the model is perfect fit.

## Discussion

### Health Problems Effect to Gender

The results of this study show that children hospitalized during 2017-2018 were male by 54.3%, greater than girls (45.7%). This result is the same as the results of a study in Ethiopia which showed higher morbidity in boys (12.2%) than girls (11.1%). However, different results were shown in a study in Northern Ethiopia which showed the prevalence of morbidity between boys and girls was the same, namely 50%. Gender have significant results as a measure of the construct of health problems. This study showed that ARI had the highest rate from the others diseases. The results showed that gender influences ARI rate because hormones 17 gamma-estradiol. It can help stabilization of body and increase immunity if there are

inflammation mediator agent such as TNF, IL-2, IL-4, IL-6, IL-8 and IFN-gamma. The mediator usable to fight infection. Male Child with his testosterone hormones delay production of the agent (Iskandar et al., 2015).

### Health Problems Effect to Disease

Throughout 2017–2018 the number of children in the Besuki Agriculture area who had to be hospitalized due to ARI was 45%. This result is higher than the number of children with ARI in India (41.6%) (Savitha & Gopalakrishnan, 2018), Northern Ethiopia (27.3%) (Dagne et al., 2020).

ARI often attacks children under five years of age who experience an average of three to six episodes of events per year. More than 12 million children reported experiencing ARI hospitalization globally in 2010. ARI is classified into upper respiratory tract infection (URI) and lower respiratory tract infection (LRI). URI attacks the upper airway covering the nose to the vocal cords on the larynx, including the paranasal sinuses and middle ear. Whereas LRI attacks the lower airways starting from the trachea, bronchi to bronchioles and alveoli (Nair et al., 2013).

Many large-scale changes in environmental and demographic conditions increase the risk of infectious disease. This risk is increasing due to increasing antibiotic resistance, the use and abuse of antibiotics can increase the process of emergence and spread of pathogenic bacteria in humans (WHO, 2013). In children who experience problems with nutrition due to lack of nutrients eaten can also increase the risk of experiencing diarrhea and respiratory disease (WHO, 2013). Factors such as mothers with complications of

childbirth, children who are not breastfed can put them at risk of malnutrition (Rahayuwati et al., 2019).

### Health Problems Effect to Nursing problems

Nursing Problems have significant results as a measure of the construct of health problems. The results showed hyperthermia is a nursing problem that most often occurs in children with all diseases, especially ARI. Hyperthermia is an increase of core body temperature that occurs due to infection. Pro inflammatory cytokines interleukin 1 (IL-1), interleukin 6 (IL-6) and tumor necrosis factor alpha (TNF) act as endogenous pyrogens that stimulate a child who has a fever if infected. Every increase of body temperature of one degree Celsius will increase carbohydrate metabolism 10-15% so that an increase of temperature effects to the increase in glucose and oxygen needs..

### Health Problems Effect to age criteria

The age of the child has significant results as a measure of the construct of children's health problems in the Besuki Residency. The age of children under 5 years most often experience health problems both ARI or other diseases due to the influence of the immune system. The immune system is the body's defence against organisms which is the result of collaboration from a series of cells, tissues, proteins and organs. As a child ages, the immune system also develops (Simon et al., 2015).

This is the reason why children under five years are vulnerable to infection or illness. This is in line with the results of research that where an increase in the percentage of CD4 + and CD8 + memory cells as children ages. That's why, if a child under five years is in direct contact with someone who has symptoms of respiratory disease can significantly increase the risk of children experiencing ARI, so child under five years need to be kept away from people who have coughs or other symptoms of the disease to prevent child under five years from becoming infected with the disease. Providing supplementary food and health promotion of nutritional status can improve health (Fitriani, Setya, & Nurdiana, 2020).

### Conclusion

Child health problems, especially such as pneumonia, diarrhea, and malaria in the agricultural area with an agricultural perspective in the Besuki Residency can affect gender, disease, nursing problems, and age criteria. So that these health problems require specific health interventions or programs according to the characteristics of gender, disease, nursing problems, and age criteria. The nurse should have a mapping of nursing problems and special agriculture-oriented interventions.

### References

- Acacioa, B., Jennifer, R., Veranic, Lanaspaa, M., Tarayn, A., Fairliec, Nhampossaa, T., Rupereza, M., Aidea, P., Brian D., Plikaytisc, Sacoora, C., Macetea, E., Alonsoa, P., & Que, B.S. (2015). Under treatment of pneumonia among children under 5 years of age in a malaria-endemic area: population-based surveillance study conducted in Manhica district- rural, Mozambique Sozinho. *International Journal of Infectious Diseases* 36(2015) 39–45.
- Ahmed, H. M., Mitchell, M., & Hedt, B. (2010). National implementation of integrated management of childhood illness (IMCI): policy constraints and strategies. *Healthpolicy* 2010 Jul;96(2):128–33. <https://doi.org/10.1016/j.healthpol.2010.01.013>
- Baiden, F., Owusu-Agyei, S., & Bawah, J et al. (2011). An evaluation of the clinical assessments of under-five febrile children presenting to primary health facilities in rural Ghana. *PloS one* 2011;6(12). <https://doi.org/10.1371/journal.pone.0028944>
- Byrne, B. M. (2013). *Structural equation modeling with AMOS: basic concepts, applications, and programming*. Routledge.
- Dagne, H., Andualem, Z., Dagnaw, B., & Taddese, A. A. (2020). Acute respiratory infection and its associated factors among children under-five years attending pediatrics ward at University of Gondar Comprehensive

- Specialized Hospital, Northwest Ethiopia: institution-based cross-sectional study. *BMC Pediatric* 20, 1–7. <https://doi.org/10.1186/s12887-020-1997-2>
- Dutta, A., Hajra, G., & Ramani, S. V. (2016). On incidence of diarrhoea among children in India. *Econ Polit Wkly* 2016;51(22):121.
- Fitriani, H., Setya, A., Nurdiana, P. (2020). Risk factors of maternal nutrition status during pregnancy to stunting in toddlers Aged 12–59 Months. *Jurnal Keperawatan Padjajaran*, 8(2). <https://doi.org/10.24198/jkp.v8i2.1305>
- Irimu, G. W., Gathara, D., & Zurovac, D et al. (2012). Performance of health workers in the management of seriously sick children at a Kenyan tertiary hospital: before and after a training intervention. *PloS one* 2012;7(7). <https://doi.org/10.1371/journal.pone.0039964>
- Iskandar, A., Tanuwijaya, S., & Yuniarti, L. (2015). Hubungan jenis kelamin dan usia anak satu tahun sampai lima tahun dengan kejadian infeksi saluran pernafasan akut (ISPA). (The relationship between sex and age of children one year to five years with the incidence of acute respiratory infections (ARI)). *Global Medical and Health Communication*, 2015, 3(1). <https://doi.org/10.29313/gmhc.v3i1.1538>
- Liu, L., Oza, S., Hogan, D., Perin, J., Rudan, I., & Lawn, J. E. (2015). Global, regional, and national causes of child mortality in 2000–13, with projections to inform post-2015 priorities: an updated systematic analysis. *Lancet* 2015;385(9966):430–440. [https://doi.org/10.1016/s0140-6736\(14\)61698-6](https://doi.org/10.1016/s0140-6736(14)61698-6)
- Nair, H., Simões, E. A., Rudan, I., Gessner, B. D., Azziz-Baumgartner, E., Zhang, J. S. F., et al. (2013). Global and regional burden of hospital admissions for severe acute lower respiratory infections in young children in 2010: a systematic analysis. *Lancet*. 2013;381(9875):1380–90. [https://doi.org/10.1016/s0140-6736\(12\)61901-1](https://doi.org/10.1016/s0140-6736(12)61901-1)
- Pahwa, S., Kumar, G. T., & Toteja, G. S. (2010). Performance of a community-based health and nutrition-education intervention in the management of diarrhoea in a slum of Delhi, India. *J Health Popul Nutr* 2010;553–559. <https://doi.org/10.3329/jhpn.v28i6.6603>
- Rahayuwati, L., Nurhidayah, I., Hidayati, N.O., & Hendrawati, S. (2019). Analysis of factor affecting nutrition status on children. *Jurnal Keperawatan Padjajaran*, 7(2). <https://doi.org/10.24198/jkp.v7i2.1131>
- Santosham, M., Chandran, A., Fitzwater, S., Fischer-Walker, C., Baqui, A. H., & Black, R. (2010). Progress and barriers for the control of diarrhoeal disease. *Lancet* 376(9734), 63–67. [https://doi.org/10.1016/s0140-6736\(10\)60356-x](https://doi.org/10.1016/s0140-6736(10)60356-x)
- Savitha, A., & Gopalakrishnan S. (2018). Determinants of acute respiratory infections among under five children in a rural area of Tamil Nadu, India. *J Fam Med Prim Care*. 2018;7(6):1268. [https://dx.doi.org/10.4103%2Fjfmpe.jfmpe\\_131\\_18](https://dx.doi.org/10.4103%2Fjfmpe.jfmpe_131_18)
- Simon, A. K., Hollander, G. A., & McMichael, A. (2015). Evolution of the immune system in humans from infancy to old age. *Proc. R. Soc. B* 2015;282:1–9. <https://doi.org/10.1098/rspb.2014.3085>
- Troeger, C., Forouzanfar, M., & Rao, P. C., et al. (2017). Estimates of the global, regional, and national morbidity, mortality, and aetiologies of lower respiratory tract infections in 195 countries: a systematic analysis for the global burden of disease study 2015. *Lancet Infect Dis* 2017; 17: 1133–61. [https://doi.org/10.1016/S1473-3099\(17\)30396-1](https://doi.org/10.1016/S1473-3099(17)30396-1)
- UNICEF. (2012). *Ringkasan kajian kesehatan ibu dan anak. (Summary of maternal and child health studies)*. Retrieved March 12, 2020, from <https://www.unicef.org/>.
- UNICEF. (2013). *Sekitar 35 juta balita masih beresiko jika target angka kematian anak tidak tercapai. (Around 35 million children under five are still at risk if the child mortality target is not achieved)*. Retrieved March 12, 2020, from <https://www.unicef.org/>

UNICEF. (2016a). *Diarrhoea remains a leading killer of young children, despite the availability of a simple treatment solution*. Retrieved March 12, 2020, from <http://data.unicef.org/child-health/diarrhoeal-disease.html>

UNICEF. (2016b). *Committing to child survival: a promise renewed progress report 2014*. 2014. Retrieved March 12, 2020, from [http://files.unicef.org/publications/files/APR\\_2014\\_web\\_15Sept14.pdf](http://files.unicef.org/publications/files/APR_2014_web_15Sept14.pdf).

Walker, C. L. F., Rudan, I., & Liu, L., et al. (2013a). Global burden of childhood pneumonia and diarrhoea. *Lancet* 2013; 381: 1405–1416. [https://doi.org/10.1016/s0140-6736\(13\)60222-6](https://doi.org/10.1016/s0140-6736(13)60222-6)

WHO. (2013). *Research Priorities for the Environment, Agriculture and Infectious Disease of Poverty*. Retrieved March 20, 2020, from <https://apps.who.int/iris/bitstream/handle/10665/78129/>

## The Correlation of Socio Demographic and Knowledge Factors Toward Therapy Options among Breast Cancer Patients

Laili Rahayuwati\*, Kusman Ibrahim, Ikeu Nurhidayah, Sri Hendrawati  
Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia  
*Corresponding Email: laili.rahayuwati@unpad.ac.id*

Submitted: 16-12-2020 Accepted: 31-12-2020 Published: 31-12-2020

### Abstract

The high prevalence and incidence of breast cancer patients poses a threat to the life quality of Indonesian women. Beside the patient's condition, therapy options are also the factors faced by both the patients and their families. This research aimed at analyzing socio demographic and knowledge factors relating to therapy options of breast cancer patients. A cross-sectional research was conducted directly to the people (community-based and hospital-based) from 198 cancer patients in the main region, West Java Province. Data were collected through face-to-face interviews with patients, with or without their family. The data were analyzed using the Chi-Square test to yield a correlation between socio demographic and knowledge factors on therapy options. The findings of this research showed that there was a significant relationship between socio demographic factor (physical condition ( $p=0.002$ ), emotional condition ( $p=0.000$ ), patient's age ( $p=0.000$ ), marital status ( $p=0.000$ ), family status ( $p=0.000$ ), faith ( $p=0.032$ ), and income ( $p=0.026$ )) and the knowledge factor (knowledge about illness ( $p=0.045$ ), the cause of breast cancer ( $p=0.000$ ), indications and early symptoms of breast cancer ( $p=0.014$ ), indications and symptoms during breast cancer therapy ( $p=0.000$ ), therapy for breast cancer ( $p=0.000$ ), and treatment on indications and symptoms ( $p=0.000$ )) with therapy options. Therapy options can be impacted by socio demographic and knowledge factors, although considerations from family also play a key role. In this context, the nurse plays the role as an advocate to raise awareness on the importance of treatment to healthcare facilities, thus the people can make a well-informed choice on their therapy. The uniqueness of the research showed the characteristic of patients, and therapies option in the multi medical system in Indonesia.

**Keywords:** Breast cancer patients, knowledge factor, socio demographic, therapy options.

## Introduction

Cancer poses around 8.2 million deaths every year and is the second highest cause of death worldwide. For men, the biggest cause of death is lung cancer, while for women, it is breast cancer. As much as 75% of breast cancer patients in the world have been identified in low- and middle-income countries (Torre et al., 2015; World Health Organization (WHO), 2017).

Breast cancer is one of the cancers with the most common types in Indonesia. It is estimated that the incidence rate in Indonesia is 12/100.000 women, more than 80% cases were found in an advanced stage, where a proper treatment was nearly impossible (Ministry of Health Republic of Indonesia, 2017). The high incidence and mortality rate by breast cancer shows that it requires a serious concern. However, the real-life situation offers a variety of therapy options, from conventional or modern, traditional and complementary.

One of the factors relating to the quality of life of the patients is determining the type of treatment to be done by patients. A study discovered that an early decision for breast cancer patients was to undergo traditional (alternative) treatment, and the patient would undergo conventional treatment if the former doesn't make any change. This is different for the healthcare providers; they believe that conventional treatment is the best choice. When patients are undergoing conventional (modern) treatment, there are those who out for the traditional one as well (Goldhirsch et al., 2013; Rahayuwati, Ibrahim, & Mardiah, 2016).

Based on a research by the Basic Health Research (Riskesdas) in 2013, 6,701 breast cancer patients were found in West Java. Meanwhile, in Bandung City, based on the data from Health Agency Bandung City in the past 3 years, the number of breast cancer patients are fluctuating. While in 2014, the number of the patients were 239, in 2015, it rose to 523. Thankfully, in 2016 the number went down to 459 (Ministry of Health Republic of Indonesia, 2017).

Most breast cancer patients become aware of their illness when it hits the advanced stage. This leads to the decreasing

quality of life, physically, psychologically, socially, and spiritually. Modern therapy for advanced-stage breast cancer patients is considered arduous to perform because of the unsatisfactory result (Manuaba, 2008). The side effects of modern therapy include fatigue, anemia, hot flashes, skin problems, and psychological distress such as anxiety and depression during and after therapy. As a result, to maximize the treatment and reduce its side effects, breast cancer patients often use complementary therapy (Saqib et al., 2012).

Complementary therapy, as an addition to modern therapy, functions as a supporting treatment to control the symptoms, increase quality of life, and contribute to the patient's overall treatment (Saini et al., 2011). Previous studies saw a set of secondary data in Health Agency Bandung City where they found that the people tend to look for complementary therapy due to its effectiveness. They believe that it assures a 100 percent recovery to the patient, although only few research shows its effect in general. An interview with the program organizer of non-communicable diseases in Health Agency Bandung said that complementary therapy in Indonesia, especially in Bandung, has a particularly high demand. According to the regulation from the Ministry of Health number 1109/MENKES/PER/IX/2007 regarding complementary and alternative treatment, it is imperative that all traditional treatments be listed into the Head of Health Agency to get a letter of registration of medical staff for the complementary-alternative treatment called SBR-TPKA (Ministry of Health Republic of Indonesia, 2015).

The development of the use of modern and complementary therapy is closely related to the decision-making process as the expected primary action. Further, every human being with the intention to self-care as part of their basic needs. This theory explains about therapeutic self-care demand--that is, any actions necessary to fulfill self-care. Breast cancer patients take the decision to use either modern or modern and complementary therapy. These conditions highly impact their decision, including age, marital status, education level, occupation, and family support (Gerber, Scholz, Reimer, Briese, &

Janni, 2006).

From the previous explanation, the most popular modern therapy is chemotherapy. Several research states that the combination between modern and complementary therapy can increase the quality of life of breast cancer patients. There are, however, some others with opposing thesis statements (Saini et al., 2011). The result of the introductory study also shows the number of complementary therapy for breast cancer in West Java, but there is no research regarding its use.

Rahayuwati, Ibrahim, and Komariah (2017) studied on qualitative treatment options for breast cancer patients during chemotherapy in Indonesia. The purpose of this study was to explore the life experiences of breast cancer patients in the choice of therapies. A sample of 17 participants was selected by purposive sampling and data collection using in-depth interviews. The results of the study stated that there were 4 dominant themes, namely (1) Cancer is a concept and part of subjective socio-legal legality; 2) Selection of the type of therapy must be accepted/agreed upon by the family and social support system; 3) Cancer conditions give meaning to the patient's life; and (4) Hope for recovery.

Research Wang et al. (2015) in China about the relationship status of social support, health insurance and clinical factors with the quality of life of Chinese women with breast cancer showed that the social support of family members, friends and neighbors are high, high income, and treatment with traditional Chinese medicine affects significantly to the quality of life of breast cancer patients.

Furthermore, therapy options can also be impacted by the distance of the therapy place to the people (physically and socially), affordable price, quality of service, and etc. (Mamik, 2010). According to Gerber et al. (2006), other factors include therapy service provider, the cost of the therapy, and distance. On the other hand, the two factors from the people who use the therapy include education level and socioeconomic status. There are also socio demographic and knowledge factors. The former focuses on the physical condition, emotional condition, age, marital status, family status, ethnicity, faith, residence, education, occupation, income, therapy period, family medical records, healthcare

provider, and insurance. The latter focuses on information source, knowledge of illness, the cause of breast cancer, early symptoms of breast cancer, indications and symptoms during therapy, the best therapy, action on the symptoms, and the risks of breast cancer. This research aimed at describing socio demographic and knowledge factors relating to therapy options of breast cancer patients.

## Method

The research was designed quantitatively, including the analysis of socio demographic and knowledge factors related to therapy options of breast cancer patients. The population was derived from several areas in Indonesia, including West Java province. The samples were obtained from medical data in the hospital where the patients underwent therapy and treatment. The number of samples was determined based on the number of population, assuming that the cancer patients were 2034 in number. Therefore, this research used the Slovin formula to get  $\alpha = 0.05$ , resulting in 300 patients as the samples. The sampling technique used was random sampling technique. However, due to the time constraints, the final samples were only 198.

Data were collected through instrument filling and interviews to breast cancer patients involving questionnaires (with the assistance of some on-field staff). Further, the instruments were tested to adjust the content and the language so that it matches with that of the patient's. The validation of instruments was done through Product Moment test and the reliability measurement was done using Cronbach's Alpha in SPSS software version 22.0 with license. Cronbach's Alpha was used to produce the average correlation between items and the number of items.

The quantitative data was processed using SPSS software version 22.0 with license. These sets of data included independent variables such as socio-demographic factor (the physical condition, emotional condition, age, marital status, family status, ethnicity, faith, residence, education, occupation, income, therapy period, family medical records, healthcare provider, and insurance)

and the knowledge factor (information source, knowledge of illness, the cause of breast cancer, early symptoms of breast cancer, indications and symptoms during therapy, the best therapy, action on the symptoms, and the risk of breast cancer). Meanwhile, the bound variable is the therapy option of whether to undergo any therapy at all, go to modern therapy, or go to modern and complementary therapy, which will later be referred to as complementary therapy. Bivariate quantitative analysis used the Chi-Square test.

Ethical consideration of this research has been consented by the Committee of Ethics

on Health Research in Faculty of Medicine Universitas Padjadjaran with number 277/UN6.C1.3.2/KEPK/PN/2015. This consent is adjusted with the objectives and the subjects in the research such as breast cancer patients and healthcare professionals. The preparation of informed consent was done to fulfill that consideration, with the objective to provide the right information to the subject. Further, this consideration has the privilege to be involved in the research voluntarily or not.

## Results

**Table 1 Distribution of Frequency on Socio Demographic Factor of Breast Cancer Patients (n=198 people)**

Socio Demographic Factor	Frequency	Percentage (%)
<b>Physical Condition</b>		
Stage I	11	5.56
Stage II	62	31.30
Stage III	72	36.36
Stage IV	29	14.65
Stage VI	13	6.57
Other Stages	11	5.56
<b>Emotional Condition</b>		
Denial	4	2.02
Anger	4	2.02
Bargaining	11	5.56
Depression	13	6.57
Acceptance	166	83.83
<b>Patient's Age</b>		
15-24 years old	3	1.51
25-34 years old	25	12.63
35-44 years old	58	29.29
45-54 years old	64	32.32
55-64 years old	41	20.71
>64 years old	7	3.54
<b>Marital Status</b>		
Single	24	12.12
Married	136	68.69
Widowed	38	19.19
<b>Ethnicity</b>		
Sundanese	169	85.35
Javanese	28	14.14
Padangnese	1	0.51

---

<b>Residence</b>		
Urban	124	62.63
Rural	74	37.37
<b>Family Status</b>		
Child	20	10.10
Wife	156	78.79
Others	22	11.11
<b>Faith</b>		
Islam	196	98.98
Protestant	1	0.51
Catholic	1	0.51
<b>Education</b>		
Uneducated	2	1.01
Elementary school	25	12.63
Elementary school graduate	49	24.75
Middle school	7	3.54
Middle school graduate	38	19.19
High school	15	7.58
High school graduate	53	26.77
Undergraduate	1	0.51
Bachelor	8	4.04
<b>Occupation</b>		
Unemployed	9	4.55
Housewife	145	73.23
Farmer	7	3.54
Labour	6	3.03
Self-Employed	12	6.06
Private Employee	12	6.06
Civil Worker	4	2.02
Teacher	2	1.01
Nurse	1	0.51
<b>Income</b>		
< Rp 500.000	48	24.24
Rp 500.000 – Rp 1.000.000	40	20.20
Rp 1.000.000 – Rp 1.500.000	53	26.77
Rp 1.500.000 – Rp 2.000.000	17	8.59
>Rp 2.000.000	40	20.20
<b>Therapy Period</b>		
< 1 years	180	90.90
1 – 3 years	17	8.59
3 – 5 years	1	0.51
<b>Family Medical Record</b>		

---

Cancer-stricken	145	73.23
Cancer-free	53	26.77
<b>Family Type</b>		
Nuclear Family	130	65.66
Big Family	39	19.70
Others	29	14.65
<b>Caregiver</b>		
Self	92	46.46
Husband	67	33.84
Relatives	7	3.54
Neighbors	1	0.51

**Table 2 Distribution of Frequency of Knowledge Factor on Respondents Regarding Breast Cancer (n=198 people)**

Knowledge Factor	Frequency	Percentage (%)
<b>Information Source</b>		
Books	1	0.51
Electronic media	16	8.08
Healthcare staff	163	82.32
Friends	7	3.54
Neighbors	6	3.03
Others	5	2.53
<b>Knowledge about Illness</b>		
Informed	139	70.20
Uninformed	59	29.80
<b>Cause of breast cancer</b>		
Informed	118	59.60
Uninformed	80	40.40
<b>Indication and early symptoms</b>		
Pain	67	33.84
Swelling	36	18.18
Wound	3	1.52
Others	96	46.46
<b>Indication and early symptoms during therapy</b>		
Nausea and vomit	42	21.21
Swelling	81	40.91
Wound	15	7.58
Pain	41	20.71
Fatigue	3	1.52
Digestive problems	2	1.01
None	14	7.07

<b>Best therapy for breast cancer</b>		
Informed	183	92.42
Uninformed	15	7.58
<b>Actions on cancer symptoms</b>		
None	21	10.61
Home therapy	8	4.04
Traditional therapy	76	38.38
Modern therapy	93	46.97
<b>Risks of breast cancer</b>		
Informed	145	73.23
Uninformed	53	26.77

**Table 3 Distribution and Frequency of Therapy Options of Breast Cancer Patients (n=198 people)**

Therapy Options	Frequency (f)	Percentage (%)
None	4	2.02
Traditional Therapy	29	14.65
Modern Therapy	137	69.19
Complementary Therapy	28	14.14

**Table 4 Result of Correlation Test on Socio Demographic Factor to Therapy Options**

Socio Demographic Factor	Therapy Options
Physical Condition	p = 0.002
Emotional Condition	p = 0.000
Patient's Age	p = 0.000
Marital Status	p = 0.000
Ethnicity	p = 0.349
Residence	p = 0.275
Family Status	p = 0.000
Faith	p = 0.032
Education	p = 0.464
Occupation	p = 0.622
Income	p = 0.026
Therapy Period	p = 0.914
Family Medical Record	p = 0.099
Family Type	p = 0.142
Caregiver	p = 0.359

**Table 5 Test Result of Correlation between Knowledge Factor of Breast Cancer Patients and Therapy Options (n=198 people)**

Knowledge Factor	Therapy Options
Information Source	p = 0.422
Knowledge about illness	p = 0.045
Cause of breast cancer	p = 0.000
Indication and symptoms	p = 0.014
Indication and symptoms during therapy	p = 0.000
Therapy for breast cancer	p = 0.000
Actions on indication and symptoms	p = 0.000
Risks of breast cancer	p = 0.537

Table 1 shows that of the patient's physical condition, 72 respondents (36.36%) are in stage-three cancer. From the emotional condition, 166 respondents (83.83%) are in the acceptance stage. Age-wise, 64 respondents (32.32%) are 45–54 years old. 136 respondents (69.69%) are married. 169 (85.35%) are Sundanese and 196 (98.98%) are Muslims. 124 (62.23%) live in the city area. 156 (78.79%) are wife in a family status. Education-wise, 53 respondents (26.77%) are high school graduates and 145 (73.23%) are housewives. Income-wise, another 53 has an income around Rp 1.000.000 - Rp 1.500.000. There are as many 180 respondents (90.90%) have undergone therapy for < 1 year and 145 (73.23%) have contracted cancer before. There are as many 130 (65.66%) live with nuclear families. During their illness, 92 (46.46%) can take care of themselves.

Table 2 shows the knowledge factor of the patient regarding breast cancer. Based on the information source, 198 respondents (100%) are well-informed about breast cancer and 163 of them (82.32%) are informed from the healthcare providers. On the other hand, 139 respondents (70.20%) are also well-informed while 118 others (59.60%) know the cause of the cancer. While all respondents are able to identify early symptoms of breast cancer, 106 (53.54%) experience pain, swelling, and wound as their first identification of breast cancer. There are 184 respondents (92.93%) experience indication and symptoms during breast cancer therapy, and 183 (92.42%) understand different types of breast cancer therapy. Table 2 also shows that 93 respondents (46.97%) know modern therapy as cancer treatment, and 145 others (73.23%)

understand the risk of the cancer.

Table 3 shows the therapy option from the respondents. It shows that 137 of them (69.19%) choose to undergo modern therapy, while only 4 (2.02%) choose not to undergo any therapy. There are 29 others (14.65%) opt out for traditional therapy, and 28 (14.14) choose complementary therapy.

The result of the correlation rest on table 4 shows that there is a relationship between physical condition (p = 0.002), emotional condition (p = 0.0000), patient's age (p = 0.000), marital status (p=0.000), family status (p = 0.000), faith (p = 0.032), and income (p = 0.026) with the respondent's therapy option. However, there is no relationship between ethnicity (p = 0.349), residence (p = 0.275), education level (p = 0.464), occupation (p = 0.622), therapy period (p = 0.914), family's medical record (p = 0.099), family type (p = 0.142), and the caregiver (p = 0.359).

The correlation test result on table 5 shows there is a relationship between knowledge of the illness (p = 0.045), cause of breast cancer (p = 0.000), indication and early symptoms of breast cancer (p = 0.000), indication and symptoms during therapy (p = 0.000), breast cancer therapy (p = 0.000), and actions on indication and symptoms (p = 0.000) and the respondent's therapy options. However, there is no relationship between information source (p = 0.422) and the risk of contracting breast cancer (p = 0.537) and the respondent's therapy options.

## Discussion

The result of this research shows that there

are different therapy options of breast cancer patients. While 137 respondents (69.19%) prefer modern therapy, 29 others (14.65%) choose traditional therapy, 28 (14.14%) complementary, and 4 (2.02%) no therapy at all. This research shows that more patients choose modern therapy over complementary. This result is not in line with Saquib et al. (2012) saying that complementary therapy is most effective to maximize the treatment and reduce the side effects of modern therapy. This is strengthened by the fact that most patients prefer modern therapy largely because of the socio demographic and knowledge factor.

In line with this research, socio demographic factors related to therapy options include physical condition, emotional condition, patient's age, marital status, family status, faith, and income. Therapy options can be affected by the respondent's knowledge regarding breast cancer. According to information sources, all respondents are well-informed about breast cancer and nearly all get the information from healthcare staff. Besides, most respondents understand breast cancer in general and its causes. They know the indications and early symptoms, and nearly all experience pain, swelling, and wounds as the first indication of breast cancer. Nearly all respondents know the actions to cure breast cancer through modern therapy. The majority of the respondents also know the risk of having breast cancer. This result is because the longer they contract cancer, the more they get to learn about the illness. That's why some of them understand their illness and prefer modern therapy to others.

The patient's quality of life can be improved through modern therapy. Types of modern therapy include radiation, chemotherapy, surgery, and combination (Wolff et al., 2007). In Indonesia, chemotherapy is the most popular one for the lately diagnosed patients. Despite its positive impact, side effects also include nausea, decrease in red blood cells, decrease in white blood cells, decrease in thrombocytes, mucositis, hair loss, and nerve disorder (rarely) (National Cancer Institute, 2009). Chemotherapy is done periodically, typically six to eight cycles for optimum effects. The result of immunohistochemical check has several considerations for the given chemotherapy regimens (Ministry of

Health Republic of Indonesia, 2015). Most breast cancer patients have a medium quality of life after chemotherapy (Heydarnejad, Hassanpour Dehkordi, & Solati Dehkordi, 2011; Pradana, 2012).

Apart from side effects, modern therapy for advanced stage breast cancer patients is difficult to perform and often leads to unsatisfactory results (Manuaba, 2008). That is why to optimize it, breast cancer patients also go for complementary therapy (Saquib et al., 2012). In this research, 28 respondents (14.0%) prefer complementary therapy. According to Andrews (2009), complementary therapy is that which completes medical treatment given to the patients. Meanwhile, Crips and Taylor (2001) said that complementary therapy on cancer patients is the insertion of traditional therapy to the modern one. This term is known as the modality theory or an activity that adds to the healthcare service approach. Some others also call this therapy a holistic treatment. This is based on the type of therapy that impacts the individual in general--that is, his harmony to integrate mind, body, and soul in a unity (Neuhouser et al., 2017; Smith, Duell, & Martin, 2004). Thus, it can be concluded that complementary therapy is a traditional therapy that adjoins the modern one to thoroughly integrate the patient's mind, body and soul as one function.

Saini et al. (2011) state that the value of quality of life of modern and complementary therapy users (herbal, special diet, body-based practices) is lower than the users of modern therapy. Kang et al. (2011) said, however, that there is no significant difference between the patient's quality of life using modern and complementary therapy and the patients who choose modern therapy only. In fact, Gerber et al. (2006) show there is no significant relationship between modern and complementary therapy and the quality of life of breast cancer patients.

The correlation result test shows that there is a relationship between physical condition, emotional condition, patients age, marital status, family status, faith, and family income with the respondent's therapy options. The cancer has an impact on the women's emotional status, specifically at a reproductive age. During therapy, they get

a unique individual experience (Rahayuwati et al., 2017). Breast cancer on women can impact her sense of existence and well-being, be it physically, emotionally, psychologically, socially, and spiritually. This will give a bigger impact when it comes to reproductive age because it has something to do with their sexuality and their position as a wife and a mother (Murtiwi, Nurachmah, & Nuraini, 2014). That said, physical condition, emotional condition, and age can impact the women to choose the right therapy.

A research from Widayatuti (2008) also claims that there are patients who do not choose therapy. Every choice is a result of discussion and agreement with family or relatives. Most patients say that the husband is the most important person in the decision-making process, followed by siblings. In terms of therapy options, sometimes the support comes from the patient's adult offspring. Then, it all spirals down to informal public figures, such as religious teachers (ustadz), or an educated family member or doctors (Rahayuwati et al., 2017).

The research result from Rahayuwati et al. (2017) also claim that it is difficult, if not impossible, for patients to make their own decisions on which therapy to undergo without other people's consideration. This is because the social character and culture is a collective one, making all important decisions to be taken together. This also applies to when the patients are diagnosed of the illness and when they get chemotherapy, resulting in a decreasing physical abilities. This is where family presence and support is paramount.

In general, respondents choose therapy not based on modern therapy, but also alternative and complementary. A research done by Rahayuwati et al. (2016) and Goldhirsch et al. (2013) claim that the initial decision of breast cancer patients to undergo therapy is traditional or alternative, and they will undergo conventional therapy if the traditional one doesn't make any change. This is different for healthcare providers, where conventional therapy is deemed to be the best choice. However, in reality, when patients undergo modern therapy, some are also mixing it up with traditional medication.

The result of this research shows there is no relation between ethnicity, residence,

education level, occupation, therapy period, family medical record, family type, and the caregiver with the respondent's therapy options. The demography shows that nearly all respondents are Sundanese and live in the city area, thus it is easier to access various health facilities. Education level is not impactful to the patient's therapy option, noting that all patients are well informed about breast cancer. Occupation-wise, most respondents are housewives. Therapy period also is not impactful because nearly all patients have undergone therapy for < 1 year and they have a medical record of cancer, live with nuclear families, and can take care of themselves during therapy.

In this research, there is a relationship between knowledge of illness, cause of breast cancer, and indication and early symptoms of the cancer, symptoms during therapy, different types of therapy, and actions on symptoms with the respondent's therapy options. The more the patients know, the better the treatment will be (Notoatmodjo, 2007).

However, there is no relationship between information source and the risk of breast cancer with the respondent's therapy options. This may be because all respondents are well-informed from healthcare providers or books, electronic media, friends, neighbors, and other sources. That said, most patients are aware of the risk of cancer as well as the alternative therapy to undergo.

Noting the high demand of breast cancer patients for therapy, it is expected that nurses are able to do a holistic approach involving biological, psychological, social, cultural, and spiritual elements to patients. Specifically, it is suggested that nurses work closely to patients and can be in the patient's shoes. That said, nurses are the advocates to help patients determine which alternative or complementary medical therapy that is more suitable with the patient's faith and that offers a recommendation that meets the needs of breast cancer patients (Potter & Perry, 2009).

## **Conclusion**

Therapy options based on this research are impacted by socio demographic factors

(physical condition, emotional condition, patient's age, marital status, family status, faith, and income) and knowledge factor (knowledge about the illness, cause of breast cancer, indication and early symptoms of breast cancer, indication and symptoms during therapy, therapy for breast cancer, actions on the symptoms). The healthcare providers must raise awareness of the people about the importance of treatment to healthcare service facilities.

Therefore, the people can choose the right therapy. The modern therapy on patients is based on their needs and wants from patients and their family. Therapy options are also highly dependent on socio demographic and knowledge factors of the patient. The more they know, the better the decision they make to treat the illness. The speed of science and technology in healthcare demands the nurses to combine it with natural products suitable with the culture of the patients. In the end, it will result in an improved and sustainable service without neglecting the patient's culture and local wisdom.

## References

Andrews, G. (2009). *Buku ajar kesehatan reproduksi wanita*. (Textbook on female reproductive health). EGC.

Crips, J., & Taylor, C. (2001). *Potter and Perry's fundamental of nursing*. Australia: Mosby a Hartcourt Health Science Company.

Gerber, B., Scholz, C., Reimer, T., Briese, V., & Janni, W. (2006). Complementary and alternative therapeutic approaches in patients with early breast cancer. A systematic review. *Breast Cancer Research and Treatment*, 95, 1999–209. <https://doi.org/http://doi.org/10.1007/s10549005-9005-y>

Goldhirsch, A., Winer, E. P., Coates, A. S., Gelber, R. D., Piccart-Gebhart, M., Thürlimann, B., ... Wood, W. C. (2013). Personalizing the treatment of women with early breast cancer: Highlights of the st gallen international expert consensus on the primary therapy of early breast Cancer 2013. *Annals of Oncology*, 24(9), 2206–2223. <https://doi.org/10.1093/annonc/mdt303>

[org/10.1093/annonc/mdt303](https://doi.org/10.1093/annonc/mdt303)

Heydarnejad, M. S., Hassanpour Dehkordi, A., & Solati Dehkordi, K. (2011). Factors affecting quality of life in cancer patients undergoing chemotherapy. *African Health Sciences*, 11(2), 266–270.

Kang, E., Yang, E. J., Kim, I. Y., Chung, S. A., Han, D. H., Ku, S. J., ... Kim. (2011). Complementary and alternative medicine use and assessment of quality of life in Korean breast cancer patients: A descriptive study. *Supportive Care in Cancer*, 20(3), 461–473. <https://doi.org/10.1007/s00520-011-1094-z>

Mamik. (2010). *Organisasi dan manajemen pelayanan kesehatan dan kebidanan*. (Organization and management of health and midwifery services). Prins Media.

Manuaba. (2008). *Gawat-darurat obstetri-ginekologi & obstetri-ginekologi sosial untuk profesi bidan*. (Obstetrics-gynecology & social obstetrics-gynecology emergencies for the midwifery profession). EGC.

Ministry of Health Republic of Indonesia. (2015). *Pusat data dan informasi Kementerian Kesehatan RI*. (Center for data and information of the Ministry of Health of the Republic of Indonesia). Ministry of Health Republic of Indonesia.

Ministry of Health Republic of Indonesia. (2017). *Pusat data dan informasi Kementerian Kesehatan RI*. (Center for data and information of the Ministry of Health of the Republic of Indonesia). Ministry of Health Republic of Indonesia.

Murtiwi, M., Nurachmah, E., & Nuraini, T. (2014). Kualitas hidup klien kanker yang menerima pelayanan hospis atau homecare: Suatu analisis kuantitatif. (Quality of life for cancer clients receiving hospice or homecare services: A quantitative analysis). *Jurnal Keperawatan Indonesia*, 9(1), 13–18. <https://doi.org/10.7454/jki.v9i1.154>

National Cancer Institute. (2009). *Breast cancer*. Retrieved July 21, 2020, from: <http://cancerweb.ncl.ac.uk/cancernet/100013.html>.

- Neuhouser, M. L., Smith, A. W., George, S. M., Gibson, J. T., Baumgartner, K. B., Baumgartner, R., ... Ballard, R. (2017). Use of complementary and alternative medicine and breast cancer survival in the Health, Eating Activity and Lifestyle Study. *Breast Cancer Res Treat.*, 160(3), 539–546. <https://doi.org/10.1007/s10549-016-4010-x>. Use
- Notoatmodjo. (2007). *Promosi kesehatan dan ilmu perilaku*. (Health promotion and behavioral science). Rineka Cipta.
- Potter, P., & Perry, A. (2009). *Fundamental of nursing (3rd ed.)*. Elsevier Canada.
- Pradana, I. P. W. (2012). *Hubungan kualitas hidup dengan kebutuhan perawatan paliatif pada pasien kanker di RSUP Sanglah Denpasar. (The relationship between quality of life and the need for palliative care in cancer patients at Sanglah General Hospital, Denpasar)*. Fakultas Kedokteran Universitas Udayana, Bali, Indonesia.
- Rahayuwati, L., Ibrahim, K., & Komariah, M. (2017). Pilihan pengobatan pasien kanker payudara masa kemoterapi: Studi kasus. (Treatment options for breast cancer during chemotherapy: a case study). *Jurnal Keperawatan Indonesia*, 20(2), 118–127. <https://doi.org/10.7454/jki.v20i2.478>
- Rahayuwati, L., Ibrahim, K., & Mardiah, W. (2016). Health seeking behavior on breast cancer therapies: patients versus providers views. *Journal of Community & Public Health Nursing*, 2(3), 2–6. <https://doi.org/10.4172/2471-9846.1000129>
- Saini, A., Berruti, A., Capogna, S., Negro, M., Sguazzotti, E., Picci, R. L., ... Ostacoli, L. (2011). Prevalence of complementary/alternative medicines (CAMs) in a cancer population in northern Italy receiving antineoplastic treatments and relationship with quality of life and psychometric features. *Quality of Life Research*, 20, 683–690. <https://doi.org/https://doi.org/10.1007/s11136-010-9795-1>
- Saquib, J., Parker, B. A., Natarajan, L., Madlensky, L., Saquib, N., Patterson, R. E., ... Pierce, J. P. (2012). Prognosis following the use of complementary and alternative medicine in women diagnosed with breast cancer. *Complementary Therapies in Medicine*, 20(5), 283–290. <https://doi.org/10.1016/j.ctim.2012.04.002>
- Smith, S. F., Duell, D. J., & Martin, B. C. (2004). *Clinical nursing skills: Basic to advanced skills*. Pearson Prentice Hall.
- Torre, L. A., Bray, F., Siegel, R. L., Ferlay, J., Lortet-tieulent, J., & Jemal, A. (2015). Global cancer statistics, 2012. *CA a Cancer J Clin*, 65(2), 87–108. <https://doi.org/10.3322/caac.21262>
- Wang, Y., Zhu, L., Yuan, F., Kang, L., Jia, Z., Chen, D., ... Feng, Z. (2015). The relationship between social support and quality of life: Evidence from a prospective study in chinese patients with esophageal carcinoma. *Iranian Journal of Public Health*, 44(12), 1603–1612.
- Widyatuti, W. (2008). Terapi komplementer dalam keperawatan. (Complementary therapy in nursing) *Jurnal Keperawatan Indonesia*, 12(1), 53–57. <https://doi.org/10.7454/jki.v12i1.200>
- Wolff, A. C., Hammond, M. E. H., Schwartz, J. N., Hagerty, K. L., Allred, D. C., Cote, R. J., ... Hayes, D. F. (2007). American Society of Clinical Oncology/College of American Pathologists Guideline Recommendations for Human Epidermal Growth Factor Receptor 2 Testing in Breast Cancer. *Arch Pathol Lab Med*, 131(1), 18–43. [https://doi.org/10.1043/1543-2165\(2007\)131](https://doi.org/10.1043/1543-2165(2007)131)
- World Health Organization (WHO). (2017). *Cancer*. Retrieved July 12, 2020, from <http://www.who.int/media centre/factsheets/fs297/en/>.

## **The Correlation between Feeding Habit Factor and The Incidence of Stunting in Children Under Five Years**

**Elni Elni\*, Erna Julianti**  
Pangkalpinang Nursing Academy, Pangkalpinang, Indonesia  
*Corresponding Email: elni495@gmail.com*

Submitted: 16-11-2020 Accepted: 07-01-2021 Published: 11-01-2021

### **Abstract**

Stunting becomes one of the prior nutritional problems in Bangka Belitung Islands Province, especially West Bangka Regency with a high stunting rate. Feeding habit in children will continuously influence nutrition fulfillment that will directly affect the incidence of stunting. This study aimed at identifying the correlation between feeding habit (beliefs, feeding practices, and children's eating behavior) and the incidence of stunting in children under five years in West Bangka Regency. This was a quantitative study with an across-sectional approach. The total sample was 186 respondents taken using a consecutive sampling technique. The instruments for data collection were height measuring instrument, height-for-age graphic according to WHO 2006 to see the z-score and the under-five children's characteristics questionnaire, a questionnaire of food beliefs, feeding practices questionnaire (CFQ), and child eating behaviour (CEBQ). The analysis in this study used a Chi-Square test. The result showed that there was a significant correlation between child eating behavior and the incidence of stunting in children under five in West Bangka Regency with a p-value of 0.001 ( $p < 0.05$ ) and an OR of 4.89. It indicates that the low eating behavior in children under five has a possibility of 4.89 times higher to experience stunting than the high eating behavior. Also, there is no correlation between mothers' beliefs and feeding practices with the incidence of stunting (p-value of 0.2 & 0.7 respectively). This study is expected to form a peer group for the community of under-five children's families to prevent and improve the children's nutritional status and development optimally.

**Keywords:** Children under five years, feeding habit, stunting.

## **Introduction**

Nutritional status has a strong influence on children's growth and development. The efforts to fulfill good nutritional status are performed from pregnancy until the birth of babies (United Nations Children's Fund, 2017). Complete nutrition during the First 1,000 Days of Life can help brain development, improve proportional growth, and decrease the risk of being infected with diseases (Saavedra & Dattilo, 2016). The inability to fulfill children's nutrition during this period can cause growth failures (Williams & Suchdev, 2017). One of the growth failures is stunting. Stunting becomes a sign of chronic malnutrition in a long-term period (Vonaesch, Tondeur, Breurec, Bata, Nguyen, Frank, ... Vray, 2017). Stunting can affect the cognitive and non-cognitive development that will be felt during the pre-school period until adolescence (Himaz, 2018).

The prevalence of stunting in the world had been decreasing, from 32.6% in 2000 to 22.2% in 2017 (United Nations Children's Fund, 2017). The decline in the incidence rate of stunting is inversely proportional to the prevalence of stunting in Indonesia. The prevalence of stunting in Indonesia in 2010 of 35.6%, increased by 37.2% in 2013 (Kemenkes, 2016). The average prevalence of stunting in children under five in Indonesia within 2005–2017 was 36.4% (Kemenkes, 2018). The prevalence of stunting in Bangka Belitung Islands Province in 2016 was 21.9%, and it increased by 27.3% in 2017. The prevalence of stunting in West Bangka Regency in 2016 was 23.2% and it increased by 25% in 2017. The range of stunting in children under five in Bangka Belitung Islands Province in 2018 was 12.1% and the highest rate was in West Bangka Regency of 18.4% (Dinas Kesehatan Provinsi Kepulauan Bangka Belitung, 2018).

Regarding the high incidence rate of stunting and the impact, it needs a thorough management effort. Dewey (2016) stated that the management of stunting is inextricably linked to the improvement of nutrition fulfillment during the First 1,000 Days of Life. Cumming and Cairncross (2016) explained that one of the factors having

a strong influence on the management of stunting is concerning the habit. The habit in the community is one of the factors affecting how parents feed their children (Batiro, Demissie, Halala, & Anjulo, 2017). There is a habit of early prelacteal feeding practices in newborn babies and early weaning practices in children under five (Illahi & Muniroh, 2016). The habit influencing these feeding practices also directly influences the children's nutrient adequacy and the incidence of stunting (Pokhrel, Nanishi, Poudel, Pokhrel, Tiwari, & Jimba, 2016). There is a gap between this study and other research. Where other research states that cultural factors related to child feeding practices, dietary restrictions such as the belief that colostrum is something that is harmful to babies that occurred in Cameroon is the cause of malnutrition in infants. This happens is also because the culture of feeding is also influenced by the low level of maternal education, which is one of the factors causing malnutrition, because it considers that colostrum is dangerous (Pemunta & Fubah, 2015). Hence, the researcher was interested in knowing the correlation between feeding habit (mothers' beliefs, feeding practices, and children's eating behavior) and the incidence of stunting in children under five in West Bangka Regency.

## **Method**

This was a quantitative study with a cross-sectional design by knowing the correlation between feeding habit and the incidence of stunting in children under five. Feeding habit consisted of three variables, namely mothers' beliefs against food, child feeding practices (restriction, supervision, and pressure), and children's eating behavior. The sample in this study was mothers and their under-five children in West Bangka Regency of 186 respondents collected using a consecutive sampling technique. The inclusion criteria for parents and under-five children in this study were children at the age of 12–59 months, mothers and their under-five children were the residents living in West Bangka Regency, mothers were able to read and write, and the mothers were willing to be the respondents after getting the information related to the

study.

The instruments for data collection in this study were a height measuring instrument to measure the child's height (length), a height-for-age graphic according to WHO 2006 to determine stunting in children under five by seeing the z-score, and questionnaire A to questionnaire D. The questionnaire B, C and D researchers took from previous research which translated in Indonesian language, and had received approval from previous researchers via electronic mail. Furthermore, the researchers tested the validity and reliability by children under five years in Pangkalpinang before conducting the research. Validity test and reliability test were applied to Questionnaire B, C, and D. Questionnaire A was the questionnaire of under-five children's characteristics consisting of under-five children's heights/lengths and their ages. Questionnaire B was a questionnaire of beliefs or traditions against food measured by using a 10-point Likert scale (1 = do not believe and 10 = strongly believe), and it obtained a validity of 0.425-0.933. Questionnaire C was Child Feeding Questionnaire to know how parents feel in feeding their children in terms of responsibility and monitoring measured using a 5-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = mostly, 5 = always), and it obtained a validity of 0.58-0.841. Meanwhile, questionnaire D was Children's Eating Behavior Questionnaire to know the children's eating behavior

measured using a 5-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = mostly, 5 = always), and it obtained a validity of 0.439-0.929. Questionnaire B, C, and D obtained a higher calculated-r (corrected item-total correlation) than the tabulated-r (0.361), so it could be inferred that the statements in the questionnaires were valid.

The result of the reliability test for questionnaire B, C, and D showed the Cronbach's Alpha values for each questionnaire, namely, 0.962 for questionnaire B (mothers' beliefs against food), 0.938 for questionnaire C (Child Feeding Practices), and 0.976 for questionnaire D (Children's Eating Behavior). Hence, these instruments are considered reliable since the value is equal to or more than 0.8. This study was approved by the health research ethics committee of Yogyakarta Aisyiyah University as an effort to protect the welfare of the respondents in the form of an ethical statement No. 393/KEP-UNISA/XII/2018.

The analysis method used in this study was a bivariate analysis. Bivariate analysis was aimed at knowing the correlation between feeding habit (mothers' beliefs, feeding practices, and children's eating behaviour) and the incidence of stunting in children under five. The statistical test was done using a chi-square test.

## Results

**Table 1 The Frequency Distribution based of Feeding Habit in Children (n=186)**

Variables	Frequency (n)	Percentage (%)
1. Mothers' Beliefs in Feeding Practices		
Weak Belief	93	50
Strong Belief	93	50
2. Child Feeding Practices		
Low Control	93	50
High Control	93	50
a. Supervision against Children's Eating Behavior		
Low Control	119	64
High Control	67	36
b. Restrictions against Children's Eating Behavior (Food Taboos)		

**Elni: The Correlation between Feeding Habit Factor and The Incidence of Stunting in Children Under Five Years**

Low Control	98	52.7
High Control	88	47.3
c.Pressure against Children's Eating Behavior		
Low Control	123	66.1
High Control	63	33.9
3.Children's Eating Behavior		
Low	94	50.5
High	92	49.5

**Table 2 The Frequency Distribution of Respondents based on the Incidence of Stunting in West Bangka Regency in 2020 (n=186)**

The Incidence of Stunting	Frequency (n)	Percentage (%)
Stunting	57	30.6
Not Stunting	129	69.4

**Table 3 The Correlation between Feeding Habit and the Incidence of Stunting in West Bangka Regency in 2020 (n=186)**

Variables	Classification of Stunting				p-value	OR (95% CI) <sup>09</sup>
	Stunting		Not Stunting			
	n	%	n	%		
Mothers' Beliefs in Feeding Practices						
Weak Belief	33	35.5	60	64.5	0.2	0.63
Strong Belief	24	25.8	69	74.2		(0.33-1.18)
Child Feeding Practices						
Low Control	27	29	66	71	0.7	1.16
High Control	29	32.3	63	67.7		(0.6-2.17)
Supervision against Children's Eating Behavior						
Low Control	42	35.3	77	64.7	0.09	0.53
High Control	15	20.5	52	77.6		(0.26-1.05)
Restrictions against Children's Eating Behavior (Food Taboos)						
Low Control	25	25.5	73	74.5	0.15	1.67
High Control	32	36.4	56	63.6		(0.89-3.12)
Pressure against Children's Eating Behavior						
Low Control	35	28.5	88	71.5	0.46	1.35
High Control	22	34.9	41	65.1		(0.7-2.58)
Children's Eating Behavior						
Low	56	59.6	38	40.4	0.001	4.89
High	1	1.1	91	98.9		(2.88-6.91)

Based on table 1, it is found that the level of mothers' beliefs in feeding, namely, 50% of them are categorized as weak, and the remaining 50% is categorized as strong. For the level of child feeding practices, it showed that 50% of them were categorized as low control, and the remaining 50% was categorized as high. Besides, the control for mothers' supervision against child feeding practices was mostly categorized as low of 64%; the control of feeding restriction was categorized low of 52.7%, and the control of pressure for child feeding practices was categorized as lows of 66.1%. Besides, children's eating behaviour was mostly categorized as low of 53.2%.

Table 2 shows that, from 186 respondents, it collected 30.6% of children under five experiencing stunting and the percentage of children who did not experience stunting was 69.4%.

Table 3 shows that mothers have weak beliefs in feeding practices to stunted children of 35.5% that is higher than those with strong beliefs of 25.8%. The result of the analysis showed that there was no significant correlation between mothers' beliefs in feeding practices and the incidence of stunting in children under five in West Bangka Regency with a p-value of 0.2 ( $p > 0.05$ ). Table 4.8 shows that the percentage of respondents with a high control in feeding practices to stunted children is 32.3% that is higher than those with a low control in feeding practices of 29%. The result of the analysis showed that there was no significant correlation between child feeding practices and the incidence of stunting in children under five in West Bangka Regency with a p-value 0.7 ( $p > 0.05$ ). Child feeding practices consisted of three domains, namely supervision, restriction, and pressure against child feeding practices. All domains in child feeding practices were not significantly correlated with the incidence of stunting since the p-value was more than 0.05 (0.09, 0.15, and 0.46 consecutively).

Table 3 shows that the percentage of low eating behavior in stunted children of 59.6% is higher than the percentage of high eating behavior of 1.1%. The result of the analysis found that there was a significant correlation between children's eating behavior and the incidence of stunting in children under five

in West Bangka Regency with a p-value of 0.001 ( $p < 0.05$ ). Besides, it obtained an OR (Odds Ratio) of 4.89. It indicates that the low eating behavior in children under five has a possibility of 4.89 times higher to experience stunting than the high eating behavior.

## Discussion

Feeding habit in children consisted of mothers' beliefs about feeding, child feeding practices, and children's eating behavior. This study shows that mothers have weak beliefs in feeding practices to stunted children that is higher than those with strong beliefs. The result of the analysis showed that there was no significant correlation between mothers' beliefs in feeding practices and the incidence of stunting in children under five in West Bangka Regency. Mothers' beliefs of feeding will affect child feeding practices. It is correlated with the habit of mothers who believe the food restrictions or taboos against nutritious food in their families. Most mothers who believe against food taboos and the application of feeding practices are those with weak beliefs. It indicates that only a few people who believe the habit and the application of feeding practices based on habit or mothers' beliefs is rarely performed (Ma, 2015).

Feeding habit influenced dietary patterns in Munaethnic, however, it showed no significant correlation with the incidence of stunting. On the other hand, the cultural factors, such as prelacteal feeding practices (feeding infants before breast milk "comes out"), as the most influential factors for the incidence of stunting (Nurbiah, Rosidi, & Margawati, 2019). Giving prelacteal food is not recommended for infants since it will be one of the factors for the failure in feeding exclusive breast milk while exclusive breastfeeding to infants strongly has a role in reducing the incidence of stunting.

Another study states that stunting is a problem of malnutrition that still occurs in West Java Province. The results showed that 10.6% of children under five years had malnutrition status. This is also related to factors that trigger stunting, including the habit of parents giving breast milk together

with complementary foods given to babies before the age of 6 months (Rahayuwati, Nurhidayah, Hidayati, Hendrawati, Agustina, & Ekawati, 2019).

One of the habits for other child feeding practices was children's eating behavior, for both healthy and unhealthy food, according to mothers' beliefs. The high amount of food commonly sold by sellers in society, at both schools and other places, such as snacks and fast food, attracts children to eat unhealthy food. A study conducted by Rivami (2017) mentioned that children who consumed unhealthy food, such as snacks, relatively experienced low energy or calorie, while children with high consumption of unhealthy food tended to have a significant effect on experiencing stunting.

Another study mentioned that a mother's beliefs against a certain habit became the prior stimulant for the mother's eating behavior and children's eating behavior to be the factors causing malnutrition in children. Nevertheless, some of them were unwilling to apply the knowledge of tradition when preparing food (especially, traditional food) to feed their children (Chakona, 2020).

Stunting is a condition where chronic malnutrition occurred in infants and children. This study shows the child feeding practices consisted of three domains, namely supervision, restriction, and pressure against child feeding practices. All domains in child feeding practices were not significantly correlated with the incidence of stunting. Another study mentioned that the habit-related factors about child feeding practices and food taboos, such as the representation of colostrum as dangerous for infants happened in Cameroon, became the factors causing infant malnutrition. Feeding habit is also affected by mothers' low education, and it becomes one of the factors causing malnutrition. Consequently, this study suggested the availability of women and health professionals empowerment programs to understand local cultural beliefs, practices, and sentiments before initiating the change efforts in feeding practices since cultural beliefs and feeding practices support the therapeutic recourse to overcome malnutrition (Pemunta & Fubah, 2015).

This study shows that the percentage of

low eating behavior in stunted children is higher than the percentage of high eating behavior. The result of the analysis found that there was a significant correlation between children's eating behavior and the incidence of stunting in children under five in West Bangka Regency. It indicates that the low eating behavior in children under five has a possibility higher to experience stunting than the high eating behavior. Another study that child feeding practices illustrated how parents supervise, give pressures, and restrictions in child feeding (Ek, Sorjonen, Eli, Lindberg, Nyman, Marcus, and Nowicka, 2016) explained that child feeding practices were the parents' method to control and regulate child feeding. This child feeding practice was aimed to know the parents' beliefs, attitudes, and the application of feeding practices toward their children (Birch, Fisher, Grimm, Markey, Sawyer, & Johnson, 2001).

Child feeding practice is one of the factors affecting children's nutrition. One of the causes is that children's food intake at pre-school age strongly depends on feeding practices by their parents. It was in line with a study by Birch, Fisher, Grimm-thomas, Markey, Sawyer, & Johnson (2001) that parents having infants and preschoolers played an important role in deciding which food consumed by their children, responding to the children's desire to eat, and deciding the sufficient amount of food for their children. In this study, child feeding practices were mostly low. It shows that the efforts in controlling and regulating children's food intake are also low. Birch, Fisher, Grimm-thomas, Markey, Sawyer, & Johnson (2001) explained that if the feeding practices done by parents were low, the children's food intake was also low. It can be inferred that low child feeding practices will influence their nutrient adequacy.

Children's eating behavior consisted of two domains, namely, children's refusal to eat and children's acceptance to eat. In this study, children's eating behavior was mostly low, and there was a significant correlation between children's eating behavior and the incidence of stunting. The proportion of children refusing to eat food is higher than to accept food. This affects the inadequate nutritional intake for children so that they are at risk of stunting, because the nutritional

needs for growth and development are insufficient. It is in line with a study by Julianti and Elni (2020) stating that there was a significant correlation between children's eating behavior and the incidence of stunting in children in Pangkalpinang city. Children's eating behavior might influence food intake that would influence children's nutrition, such as stunting (Biondi, 2007).

Birch, Fisher, Grimm-thomas, Markey, Sawyer, and Johnson (2001) explained that preschoolers had already had a desire to eat food they like or dislike. It confirms that the children's desire to choose food will allow the possibility of children to have eating behavior that is not appropriate with the efforts to fulfill the children's optimum nutrition. On the other hand, parents should have a good ability to control the feeding to their children. It is in line with a study by Birch, Fisher, Grimm-thomas, Markey, Sawyer, and Johnson (2001) describing that child feeding practices strongly correlated with children's eating behavior. Another research finding showed that initiating improperly feed weaning food positively and directly correlated with stunting in children (Abeway, Gebremichael, Murugan, & Assefa, 2018).

The failure in exclusive breastfeeding due to prelacteal food is shown in a study by Rohmin, dan Malahayati (2015) stating that feeding practices with prelacteal food are one of the factors for the failure in breastfeeding, whereby it can be caused by mothers' behavior and family tradition. Another study also mentioned that habit influences a mother's control against feeding practices. A research finding mentioned that mothers' choices toward food for their children were strongly influenced by a certain cultural norm. Habit believed by a mother directly influences the children's nutrition intake and the mother's attitude and behavior control in child feeding practices (Baloch, Jomezai, & Ismail, 2020).

The incidence of stunting is besides being influenced by low eating habits in children, is also caused by the nutritional status of the mother during pregnancy which affects the risk factors for stunting in children. Inadequate supply of nutrients to pregnant women impairs fetal growth. This shows that the mother's eating habits during pregnancy, which is a source of nutrition for the fetus, will

affect the mother's nutritional status during pregnancy and are associated with child stunting (Fitriani, Setya, & Nurdiana, 2020). This means that the incidence of stunting is not only caused by the child's eating habits, but also influenced by the mother's nutritional status which is obtained from the habits and mother's food intake.

## Conclusion

The prevalence of stunting in this study was 30.6%. Low eating behavior occurred in stunted children is more than high eating behavior. The result of the analysis finds that there is a significant correlation between children's eating behavior and the incidence of stunting in children under five in West Bangka Regency. The results of this study is expected the formation of a peer group for family communities with stunting toddlers in overcoming problems that arise due to stunting so that the incidence of stunting decreases and increases the nutritional status.

## References

- Abeway S, Gebremichael B, Murugan R, Assefa M, & A. Y. M. (2018). Stunting and its determinants among children aged 6–59 months in northern ethiopia: a cross-sectional study. *Journal of Nutrition and Metabolism*. <https://doi.org/10.1155/2018/1078480>
- Baloch, F.A., Jomezai, N.A. and Mohamed Ismail, S. A. M. (2020). Food and cultural norms: rural mothers' selection of nutrition intake for their young children. *Health Education*, 120(1), 87–106. <https://doi.org/doi.org/10.1108/HE-09-2019-0040>
- Batiro, B., Demissie, T., Halala, Y. and Anjulo, A.A. (2017). Determinants of stunting among children aged 6-59 months at KindoDidayeworeda, Wolaita Zone, Southern Ethiopia: Unmatched case control study. *PLoS ONE*, 12(12), 106–189. <https://doi.org/10.1371/journal.pone.0189106>
- Birch, L. L., Fisher, J. O., Grimm-thomas, K., Markey, C. N., Sawyer, R., & Johnson,

- S. L. (2001). Confirmatory factor analysis of the Child Feeding Questionnaire : A measure of parental attitudes , beliefs and practices about child feeding and obesity proneness. *Appetite*, 201–210. <https://doi.org/10.1006/appe.2001.0398>
- Chakona, G. (2020). Social circumstances and cultural beliefs influence maternal nutrition, breastfeeding and child feeding practices in South Africa. *Nutrition Journal*, 19(47). <https://doi.org/doi.org/10.1186/s12937-020-00566-4>
- Cumming, O., & Cairncross, S. (2016). Can water, sanitation and hygiene help eliminate stunting? Current evidence and policy implications. *Maternal and Child Nutrition*, 12, 91–105. <https://doi.org/10.1111/mcn.12258>
- Dewey, K. G. (2016). Reducing stunting by improving maternal, infant and young child nutrition in regions such as South Asia: evidence, challenges and opportunities. *Maternal & Child Nutrition*, 12, 27–38. <https://doi.org/10.1111/mcn.12282>
- Dinas Kesehatan Provinsi Kepulauan Bangka Belitung. (2018). *Profil kesehatan provinsi Kepulauan Bangka Belitung. (Health profile of Bangka Belitung Islands Province)*. Dinas Kesehatan Provinsi Kepulauan Bangka Belitung.
- Ek, A., Sorjonen, K., Eli, K., Lindberg, L., Nyman, J., Marcus, C., & Nowicka, P. (2016). Associations between parental concerns about preschoolers' weight and eating and parental feeding practices: Results from analyses of the child eating habit questionnaire, the child feeding questionnaire, and the lifestyle behavior checklist. *PLoS ONE*, 11(1), 1–20. <https://doi.org/10.1371/journal.pone.0147257>
- Fitriani, H., Setya, A, R., & Nurdiana, P. (2020). Risk factors of maternal nutrition status during pregnancy to stunting in Toddlers Aged 12-59 Month. *Jurnal Keperawatan Padjadjaran*, 8(2), 183–191. <https://doi.org/10.24198/jkp.v8i2.1305>
- Himaz, R. (2018). Stunting later in childhood and outcomes as a young adult: Evidence from India. *World Development*, 104, 344–347. <https://doi.org/10.1016/j.worlddev.2017.12.019>
- Illahi, R. K., & Muniroh, L. (2016). Gambaran sosio budaya gizi etnik Madura An illustration of the socio-cultural nutritional habit of Madura. (An illustration of the socio-cultural nutritional habit of Madura). *Media Gizi Indonesia*, 11(2), 135–143. <https://doi.org/10.20473/mgi.v11i2.135-143>
- Julianti, E., & E. (2020). Determinants of Stunting in Children Aged 12-59 Months. *Media Journal of Nursing*, 10(1), 36–45. <https://doi.org/10.14710/nmjn.v10i1.25770>
- Kemenkes. (2016). *Situasi balita pendek. (Short toddler situation)*.
- Kemenkes. (2018). *Riset kesehatan dasar. (Basic Health Research)*. Kemenkes RI.
- Ma, G. (2015). Food, eating behavior, and culture in Chinese society. *Journal of Ethnic Foods*, 2(4), 195–199. <https://doi.org/10.1016/j.jef.2015.11.004>
- Nurbiah.,Rosidi, A., Margawati, A. (2019). The potency of socio-economic family and cultural factor in affecting stunting of Muna ethnic in Batalaiworu, Southeast Sulawesi Series: Earth and Environmental Science. *In IOP Conference Series: Earth and Environmental Science*, 292(1), 12–15. <https://doi.org/10.1088/1755-1315/292/1/012015>
- Pemunta, N., & Fubah, M. (2015). Socio-cultural determinants of infant malnutrition in Cameroon. *Journal of Biosocial Science*, 47(4), 423–448. <https://doi.org/10.1017/S0021932014000145>
- Pokhrel, K., Nanishi, K., Poudel, K.C., Pokhrel, K.G., Tiwari, K. and Jimba, M. (2016). Undernutrition among infants and children in Nepal: maternal health services and their roles to prevent it. *Maternal and Child Health Journal*, 20(10), 2037–2049. <https://doi.org/10.1007/s10995-016-2023-z>

Rahayuwati, L., Nurhidayah, I., Hidayati, N, O., Hendrawati, S., Agustina, H, S., & Ekawati, R. (2019). Analysis of Factor Affecting Nutrition Status on Children. *Jurnal Keperawatan Padjadjaran*, 7(2), 117–131. <https://doi.org/doi.org/10.24198/jkp.v7i2.1131>

Rivami, D. S. (2017). *Maternal and Child diet-related factors associated with stunting and wasting in children 6-23 months of age in Indonesia*.

Rohmin, A., Malahayati, N., H. (2015). Faktor-faktor yang mempengaruhi praktik pemberian makanan prelakteal pada bayi baru lahir di Kecamatan Bukit Kecil Kota Palembang. (Factors Affecting Pre-lacteal Feeding Practices for Newborns in Bukit Kecil Subdistrict, Palembang City). *Jurnal Kesehatan Politeknik Kesehatan Tanjung Karang*, 6(2). <https://doi.org/http://dx.doi.org/10.26630/jk.v6i2.104>

Saavedra, J. M., & Dattilo, A. M. (2016).

Nutrition in the First 1000 days of life: Society's greatest opportunity. *Early Nutrition and Long-Term Health: Mechanisms, Consequences, and Opportunities*. <https://doi.org/10.1016/B978-0-08-100168-4.00025-2>

United Nations Children's Fund, the W. H. O. and W. B. G. (2017). *Level and Trends in Child Malnutrition*: UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates.

Vonaesch, P., Tondeur, L., Breurec, S., Bata, P., Nguyen, L. B. L., Frank, T., ... Vray, M. (2017). Factors associated with stunting in healthy children aged 5 years and less living in Bangui (RCA). *PLoS ONE*, 12(8). <https://doi.org/10.1371/journal.pone.0182363>

Williams, A. M., & Suchdev, P. S. (2017). Assessing and improving childhood nutrition and growth globally. *Pediatric Clinics of North America*, 64(4), 755–768. <https://doi.org/10.1016/j.pcl.2017.03.001>

## Author Index

### A

Aan Nuraeni, 231  
Atlastieka Praptiwi, 231

### E

Early Octavia Limbong, 208  
Eka Afdi S, 262  
Elni Elni, 283  
Erna Julianti, 283

### F

Farida Norma Yulianti, 243  
Failasuf Wibisono, 253  
Fitria Endah Janitra, 253  
Fitrio Deviantony, 191

### H

Heni Purnama, 221

### I

Ikeu Nurhidayah, 231, 271  
Ikhlash Muhammad Jenie, 200  
Ilya Krisnana, 243  
Indah Sri Wahyuningsih, 253  
Ira Rahmawati, 262  
Iqlima Dwi Kurnia, 243

### K

Kusman Ibrahim, 271

### L

Laili Rahayuwati, 271  
Lantin Sulistyorini, 262  
Linlin Lindayani, 221

### M

Muhammad Mahfud, 253

### N

Nyayu Nina Putri Calisanie, 221

### P

Peni Perdani J, 262

### S

Sarinti Sarinti, 253  
Slamet Purnomo, 200  
Sri Hartati Pratiwi, 208  
Sri Hendrawati, 271

### R

Rebriarina Hapsari, 253

### T

Taryudi Taryudi, 221  
Tuti Pahria, 208

### W

Wantiyah Wantiyah, 191  
Wiwit Ulansari, 191

## Subject Index

### A

Age criteria, 271, 273, 275, 276, 277  
Agricultural, 271, 272, 273, 277  
Aphasia, 210, 211, 212, 214, 215, 216, 217

### B

Blended learning, 231, 232, 233, 237, 238  
Breast cancer patients, 280, 281, 282, 283, 288, 289

### C

Cardiac rehabilitation, 241, 242, 243, 249, 250, 251  
Chest pain, 241, 242, 243, 244, 247, 248, 250  
Child, 271, 272, 273, 276, 277, 278, 279  
Child abuse sexual, 252  
Children under five years, 292  
Coronary heart disease, 241, 242, 243, 249, 250, 251  
Coronary artery disease, 201, 209  
COVID-19 patients, 262, 263, 264, 265, 266, 267, 268, 269

### D

Depression, 241, 242, 243, 244, 247, 248, 249, 250, 251  
Discrimination, 231, 232, 235, 237, 238, 239  
Disease, 271, 273, 274, 275, 276, 277, 278, 279

### F

Feeding habit, 292, 293, 296, 297

### G

Gender, 271, 273, 275, 276, 277

### H

Health problems, 271, 272, 273, 275, 276, 277  
Hemodialysis, 218, 219, 220, 225, 226, 227, 228, 229, 230  
HIV-related stigma, 231, 232, 235, 237, 238, 239, 240

### I

Intervention, 231, 232, 233, 234, 235, 237, 238, 239

### K

Knowledge, 252, 253, 254, 255, 257, 258, 259, 260  
Knowledge factor, 280, 282, 283, 287, 288, 290

### N

Nurses, 231  
Nursing problems, 271, 273, 275, 276, 277

### M

Motion picture, 252

### P

Physiology, 218, 219  
Physical fitness, 241, 242, 243, 247, 248, 249  
Professionalism, 262, 264, 265, 266, 268  
Psychology, 218, 219, 227

### R

Reciting Qur'an, 210, 212, 214, 215  
Recurrence, 241, 242, 243, 244

### S

Self-efficacy, 201, 202, 205, 206, 207, 208, 209  
Selftoughness, 262  
Situational, 218, 219  
Spiritual intelligence, 201, 202, 203, 205, 206, 207, 208, 209  
Speaking ability, 210, 212, 213, 214, 215  
Spirituality, 210, 211, 212, 213, 214, 215, 217  
Socio demographic, 280, 282, 288, 290  
Stunting, 292, 293, 294, 296, 297, 298, 299, 300  
Symptom burden, 218, 219, 220, 221, 223, 224, 225, 226, 227, 228, 229

### T

Therapy options, 280, 281, 282, 287, 288, 290  
The nurses's challenge, 262

Advisory and Editorial Board expressed sincere appreciation  
to peer reviewer as follows:

**Hermalinda, Ns. Sp. Kep. An**  
**(Universitas Andalas)**  
**Dini Mariani, PhD**  
**(Poltekkes Tasikmalaya)**  
**Dr. Ah. Yusuf, S.Kp., M.Kes**  
**(Universitas Airlangga)**  
**Restuning Widiasih, Ph.D**  
**(Universitas Padjadjaran)**  
**Desy Indra Yani, MNS**  
**(Universitas Padjadjaran)**  
**Ns. Bayhakki, M.Kep, SP.KMB, PhD**  
**(Universitas Riau)**  
**Saldy Yusuf, Ph.D**  
**(Universitas Hasanuddin)**  
**Linlin Lindayani, Ph.D**  
**(PPNI Jawa Barat)**  
**Jenny Marlindawani Purba, Ph.D**  
**(Universitas Sumatera Utara)**  
**Aan Nuraeni, M.Kep**  
**(Universitas Padjadjaran)**  
**Dr. Saryono**  
**(Universitas Jenderal Soedirman)**  
**Iyus Yosep, M.Si**  
**(Universitas Padjadjaran)**  
**Dr. Nita Fitria, AIFO**  
**(Universitas Padjadjaran)**  
**Lilibeth Al-Kofahy, Ph.D, RN**  
**(Sam Houston State University)**  
**Titis Kurniawan, S. Kp., MNS**  
**(Universitas Padjadjaran)**  
**Iqbal Pramukti, MSc**  
**(Universitas Padjadjaran)**

Thanks to the excellent cooperation for supporting the Padjadjaran Nursing Journal.

**Editorial Boards**

## SEPUTAR INFORMASI

### Jurnal Keperawatan Padjadjaran

Bagi yang berminat untuk berlangganan JKP harap mengisi formulir yang terdapat pada halaman terakhir dan kirimkan melalui pos, fax, atau melalui email yang ditujukan ke alamat yang tertera di bawah ini :

**REDAKSI JURNAL KEPERAWATAN PADJADJARAN**  
**FAKULTAS KEPERAWATAN UNIVERSITAS PADJADJARAN**  
**GEDUNG AKADEMIK 2 FAKULTAS KEPERAWATAN**  
**LT. 1 JL. RAYA BANDUNG – SUMEDANG KM 21, JATINANGOR**  
**FAX : (022) 7795596 , Email : jkp.fkep@unpad.ac.id**

**Contact Person: Novita (085317736810), Winingsih Lestari (081214706913)**

#### Formulir Pesanan

Saya yang bertanda tangan di bawah ini :

Nama / Instansi :

Alamat Instansi :

Alamat Rumah :

Kode Pos :

Tlp / Hp :

- Saya bermaksud untuk mendapatkan JKP secara teratur (3 kali/ tahun), dengan mengirimkan pengganti ongkos cetak (belum termasuk ongkos kirim) Rp 80.000.-/Eksemplar

Volume Terbitan : ..... No. : ..... ; sebanyak ..... eksemplar

- Langsung ke Redaksi Jurnal Keperawatan Padjadjaran
- Melalui Bank BNI, Cabang UNPAD Jatinangor a/n Jurnal Keperawatan Padjadjaran  
No. Rekening 0308907544

Hormat Saya

(.....)

Nama jelas

\* Fotocopy bukti pembayaran harap segera dikirim kembali ke Redaksi JKP melalui fax/email