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Original Research

Relationship between Demographic Characteristics and Moral Sensitivity among Professional Nursing Students in Bali

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ABSTRACT

Introduction: Moral sensitivity is indispensably required in nurses for them to be aware of and be able to understand clients' needs. This study aimed to determine the relationship between demographic characteristics and moral sensitivity among professional nursing students in Bali.

Methods: The research used a descriptive-correlation method and a cross-sectional approach. The study population was all professional nursing students in Bali with 162 students as research respondents, sampled using the purposive sampling technique. The dependent variable is the moral sensitivity among professional nursing students and the independent variable is the demographic characteristics consisting of gender, age, religion, and number of siblings. Data were collected by means of a moral sensitivity questionnaire for nursing students developed by Lutzen in 1993 consisting of 27 statements.

Results: The results of this study show that there is a significant relationship between religion and moral sensitivity ($p=0.027$; $\alpha=0.05$), and that there is no relationship between sex, age, and number of siblings and moral sensitivity ($p>0.05$; $\alpha=0.05$).

Conclusion: The nursing students' level of faith and understanding of their respective religious teachings can increase their moral sensitivity in providing nursing care.

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demographic characteristics; moral sensitivity; nurse; nursing students

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INTRODUCTION

In providing nursing care to the clients, nurses must consider the ethical and moral aspects. They have the responsibility to apply the ethics of caring for every patient they are treating as part of their professional role. Law No. 38 of 2014 on Nursing mandates that the delivery of nursing services must be carried out responsibly, based on ethics and professionalism. Nevertheless, nurses are not always completely prepared to deliver optimum nursing services or they are not able to properly care for their patients (Woods, Rodgers, Towers, & La Grow, 2015).

In this case, sensitivity to address these problems, which is known as moral sensitivity, is required to respond to various ethical issues (Trobec & Starcic, 2015). Moral sensitivity is a fundamental personal attribute required in a nurse to be competent in identifying, interpreting, and appropriately responding to ethical issues in the nurse's relationship with the patient, in order to improve the patient's wellbeing (Kim, Kang, & Ahn, 2013). Moral sensitivity and consideration could improve the quality of relationship between the patient and the nurse (Heggestad, Nortvedt, & Slettebø, 2013). Improvement of moral sensitivity in nursing practice is needed to prepare nurses that are ethically competent in implementing nursing care and decision-making (Ohnishi et al., 2019).

Several studies found that the mean score of nurses' moral sensitivity was in the moderate category, which contributed to a decrease in the quality of services (Nora, Zoboli, & Vieira, 2017; Range & Rotherham, 2010). A study in Iran, Thailand, and South Korea also showed that nurses' moral sensitivity was in the moderate category (Boonyamanee, Suttharangsee, Chaowalit, & Parker, 2014; Borhani, Abbaszadeh, Mohamadi, Ghasemi, & Hoseinabad-Farahani, 2017; Han, Kim, Kim, & Ahn, 2010). Ethical and moral education for nursing

students in Indonesia is given since the first year of college students, so it is expected to increase moral sensitivity of students from the start of nursing education.

Moral sensitivity in nursing practice is expected to be applied starting from nursing school. A previous study regarding ethics in nursing practice revealed the importance of preparing nursing students to adjust themselves to the ethical challenges in their future role as a nurse (Muramatsu, Nakamura, Okada, Katayama, & Ojima, 2019). This requirement has to be met because newly-registered nurses will face different moral dilemmas occurring in every nursing care administration, which may cause nurses to experience stress and burnout (Fairchild, 2010). The level of moral sensitivity was influenced by a number of factors, such as socio-demographic factors and professional characteristics, including income, quality of work life, professional satisfaction, nurse's length of service, number of patients per day, and total number of nurses in the workplace (Öztürk, Şener, Koç, & Duran, 2019). Study on the description of the moral sensitivity and the determinant factor that influence the moral sensitivity among professional nursing students in Indonesia especially has never been done before.

Based on the problems described above, this study aimed to identify the relationship between demographic characteristics and moral sensitivity among professional nursing students in Bali by means of a quantitative approach.

MATERIALS AND METHODS

The present study is a correlative analytic study with a cross-sectional design. The dependent variable of the study is the moral sensitivity among professional nursing students and the independent variable is the demographic characteristics consisting of gender, age, religion, and number of siblings. A total of 162 professional nursing students in Bali were recruited as participants by using the purposive sampling technique from September to November 2018 with inclusion criteria: (1) professional nursing students in the regular program, (2) Students not on leave when the entire research process is carried out, (3) Students are willing to become respondents by signing the informed consent form as a participant. The 27-item moral sensitivity questionnaire developed by Lutzen (1993) and the participants' demographic data form were used to collect the data (gender, age, religion, and number of siblings). The questionnaire had been proven to have good validity and reliability (Park, 2012).

The procedure in this study began with organizing a research permit. Permission to conduct research was obtained from relevant institutions. The researcher then chose one lecturer in each nursing institution as an assistant in this study. Research assistants have the same role as researchers. This role is carried out when researchers cannot meet directly with students. The researcher provided guidance and understanding of the research assistant's about procedures and how to fill out the questionnaire. Determination of respondents was done by looking at the names of students who are registered as study populations. They were given an explanation of the objectives, benefits and procedures of the research conducted. The researcher or research assistant asked the respondent to fill in the consent form to become a respondent after agreeing to be a participant in the research conducted.

Univariate analysis was performed to examine the distribution frequency and mean value of the nursing students' demographic characteristics and moral sensitivity. Meanwhile, the relationship between gender and moral sensitivity among the nursing students was analyzed using an independent t test. In addition, the relationship between religion and moral sensitivity among the nursing students was analyzed using one-way ANOVA. Finally, a Spearman's Rank test was performed to analyze the relationship between the nursing students' age and number of siblings and their moral sensitivity with Confidence Interval at 95% ($\alpha = .05$).

This study was granted the approval of the Institutional Review Board of the Faculty of Medicine, Udayana University and Sanglah Hospital by virtue of Approval No. 1673/UN14.2.2/PD/KEP/2018. All of the participants voluntarily signed the informed consent as a participant in the present study.

RESULTS

The participants' demographic characteristics are presented in Table 1 and Table 2. Meanwhile, Table 3 presents the distribution frequency of the participants' moral sensitivity. The results showed that the majority of respondents were women (75.3%) and Hindu (92.6%). In addition, the average age of respondents in this study was 23 years. The age of the youngest respondent was 21 years and the oldest was 24 years. The average number of respondent siblings was two people with at least one person and at most eight people. The results of the normality test using the Kolmogorov Smirnov test showed that the moral sensitivity scores of students were normally distributed. Table 4 shows the data categories of moral sensitivity of students with mean scores as cut of points. Mean score $\geq$ 142.27 is good moral sensitivity and mean score <142.27 is student with low moral sensitivity.

The results show that there is a significant relationship between religion and moral sensitivity among the nursing students in Bali Province (p = .027). This means that there are differences in the mean score of moral sensitivity among the nursing students between Hindus, Muslims and Christians. However, there was no significant relationship between gender, age, and number of siblings and moral sensitivity among the nursing students (p > .05).

Table 1. Participants' Demographic Characteristics based on Gender and Religion (n = 162)

Variables	n	%
Gender		
Male	40	24.7
Female	122	75.3
Religion		
Hindu	150	92.6
Islam	10	6.2
Christianity	2	1.2

Table 2. Distribution Frequency of Age and Number of Siblings (n = 162)

Variables	Median (Min–Max)	95% CI
Age (years)	23 (21–24)	22.79; 23.85
Number of siblings (person)	2 (1–8)	2.04; 2.45

Table 3. Distribution Frequency of Participants' Moral Sensitivity (n =162)

Variable	Mean (SD)	95% CI
Moral sensitivity	142.27 (20.31)	139.12; 145.42

Table 4. Distribution Frequency of Participants' Moral Sensitivity Category (n =162)

Variable	Mean (SD)	95% CI
Moral sensitivity	142.27 (20.31)	139.12; 145.42
Moral sensitivity	n	%
Low	73	45.1
Good	89	54.9

Table 5. The Relationship between Demographic Characteristics and Moral Sensitivity among Professional Nursing Students in Bali (n = 162)

Variable	n	Mean (SD)	Median (Min–Max)	MD	r	P value
Age (years)	162	-	23 (21–24)	-	-0.026	0.745†
Number of sibling (person)	162	-	2 (1–8)	-	-0.18	0.818†
Gender				-2.651	-	0.224‡
Male	40	140.28 (22.69)	-			
Female	122	142.93 (19.52)	-			
Religion				-	-	0.027*
Hindu	150	143.39 (20.30)	-			
Islam	10	131.00 (14.30)	-			
Christianity	2	115.00 (14.14)	-			

† *Spearman's Rank test;* ‡ *T Independent t- test;* **One Way ANOVA test (α = .05)*

DISCUSSION

The majority of the participants in the present study have good moral sensitivity. The results of this study support previous studies which reported that moral sensitivity among nursing students or nurses was relatively high (Borhani, Abbaszadeh, & Hoseinabadi-Farahani, 2016; Kim, Park, You, Seo, & Han, 2005). Students who have good moral sensitivity have a better ability in identifying moral or ethical issues and determining an action, in doing which they tend to refer to moral principles (Reza, 2013).

Moral sensitivity is an ability to identify moral issues. Moral sensitivity is defined as an individual's ability to understand that a certain situation has a moral meaning when that situation is experienced by an individual (Kim, Kang, & Ahn, 2013). Moral sensitivity can be considered as a personal, intuitive concept, or even a competence and an essential dimension in daily decision-making that arises from a search for moral meaning of human acts (Kim Lützén & Ewalds-Kvist, 2013; Tuvesson & Lützén, 2017). Moral sensitivity comprises the experiences and personal development of an individual and the experiences of others. It is in a constant process of change and development throughout a professional's life (Baykara, Demir, & Yaman, 2015). The process of moral sensitivity takes place before an individual considers a moral decision. The components of moral sensitivity include showing kindness, developing a moral understanding, modifying autonomy, interpersonal orientation, moral conflict experiences, and using knowledge as health professionals (Lützén, 1993). Students' moral sensitivity is also influenced by their demographic characteristics, including age, gender, religion, and number of siblings (Park, 2012). However, this study shows different results. This can be caused by other factors that might influence the moral sensitivity of students, such as student practice

experience and culture or family environment, which need to be further investigated.

The present study reported that there was a significant relationship between religion and the nursing students' moral sensitivity. Religion is one factor that contributes to an individual's moral development. What makes people understand and implement moral principles in life can be linked with religion (Park, 2012). It is related to an individual's level of moral sensitivity (Han, Kim, Park, Ahn, Meng, & Kim, 2007). Thus, religion can shape people's mindset toward moral principles.

In addition, this result is also in congruence with a study that reported a strong significant positive correlation between religiosity and morality in adolescents (Reza, 2013). In other words, the higher the religiosity, the higher the adolescents' morality. Problem solving through religion had significant contributions in overcoming work stress (Safaria, 2012).

An individual who is mature in practicing her/his religion and routinely carries out religious rituals will always try to obey the teachings of her/his religion. Consequently, it has a positive effect on the person's behavior (Nashori, 1997). In addition, people will be more open to all facts and values and present moral and practical purposes in life while still adhering to the teachings of the religion that they believe in (Indrawati, 2006).

The present study also found that there was no significant correlation between age and gender and moral sensitivity in this study. These results are contrary to a previous study that reported that there was a significant difference between demographic characteristics, age, and gender and moral sensitivity (Tuvesson & Lützén, 2017). Students who were older and female had a higher level of moral burden and strength. In addition to this, a study also reported that there was a significant difference between age and moral sensitivity (Kim et al., 2005). Those who were aged 25–30 years had a higher score in moral sensitivity compared to those who were under 25 years old and over 30 years old. The different results between the present study and the previous ones could be caused by the fact that there was no big gap in the participants' age range, because all of the participants were professional nursing students. In addition, the frequency of the participants' gender was not the same.

Lastly, the present study reported that there was no significant correlation between the number of siblings and moral sensitivity. This result is in contrast to a study that reported that the difference in the number of siblings influenced an individual's level of moral sensitivity (Park, 2012). Some findings reported on siblings being positively impacted by their lived experiences, through the expression of positive social skills, increased empathy, and more caring personalities (Cox, Marshall, Mandleco, & Olsen, 2003). Researchers argue that the number of siblings is not related to moral sensitivity because students place different feelings between siblings and patients as other people. It is possible for students to feel a sense of belonging to their siblings due to their blood ties and growing up together since they were young in one family environment. Whereas, with patients, it is felt necessary to have a relationship over a longer time so that a sense of belonging or sensitivity arises like a brother.

This study has several limitations, although efforts have been made to overcome them. This research cannot involve all nursing institutions in Bali because the periods of practice between institutions are different. Students in some institutions were not in the practice period when the research is conducted. The researcher also cannot fully control and see directly when the respondent answers the questionnaire.

CONCLUSION

This study concludes that there is a significant relationship between religion and moral sensitivity among professional nursing students in Bali. However, gender, age, and number of siblings were found to be unrelated to the moral sensitivity. The majority of professional nursing students have good moral sensitivity.

Students are expected to increase their faith and understanding of the teachings of their respective religions. This will affect the moral sensitivity of students, especially in providing care to patients. Researchers also recommend that future researchers can identify more deeply about other factors that can influence the application of moral sensitivity, such as morality knowledge, practical experience, family culture, spirituality, and emotional intelligence. The results of the study are expected to provide appropriate interventions to improve the moral sensitivity of nursing students.

REFERENCES

Baykara, Z. G., Demir, S. G., & Yaman, S. (2015). The effect of ethics training on students recognizing ethical violations and developing moral sensitivity. *Nursing Ethics*. https://doi.org/10.1177/0969733014542673

Boonyamanee, B., Suttharangsee, W., Chaowalit, A., & Parker, M. E. (2014). Exploring moral sensitivity among Thai psychiatric nurses. *35 Songklanagarind Journal of Nursing Songklanagarind Journal of Nursing*.

Borhani, F., Abbaszadeh, A., & Hoseinabadi-Farahani, M. J. (2016). Moral sensitivity and its dimensions in Iranian nursing students. *Journal of Medical Ethics and History of Medicine*.

Borhani, F., Abbaszadeh, A., Mohamadi, E., Ghasemi, E., & Hoseinabad-Farahani, M. J. (2017). Moral sensitivity and moral distress in Iranian critical care nurses. *Nursing Ethics*. https://doi.org/10.1177/0969733015604700

Cox, A. H., Marshall, E. S., Mandleco, B., & Olsen, S. F. (2003). Coping responses to daily life stressors of children who have a sibling with a disability. In

Journal of Family Nursing. https://doi.org/10.1177/1074840703258328

Fairchild, R. M. (2010). Practical ethical theory for nurses responding to complexity in care. *Nursing Ethics*. https://doi.org/10.1177/0969733010361442

Han, S. S., Kim, Y. S., Park, J. H., Ahn, S. H., Meng, K. H., & Kim, J. H. (2007). A study of the moral sensitivity of nurses and nursing students in Korea. *Korean Journal of Medical Ethics Education*, *10*(2), 117–124.

Han, S. S., Kim, J., Kim, Y. S., & Ahn, S. (2010). Validation of a korean version of the moral sensitivity questionnaire. *Nursing Ethics*. https://doi.org/10.1177/0969733009349993

Heggestad, A. K. T., Nortvedt, P., & Slettebø, Å. (2013). The importance of moral sensitivity when including persons with dementia in qualitative research. *Nursing Ethics*. https://doi.org/10.1177/0969733012455564

Indrawati, E. (2006). Hubungan antara kematangan beragama dengan kecenderungan strategi coping. *Jurnal Psikologi Undip*. https://doi.org/10.14710/jpu.3.2.69

Kim, Y. S., Kang, S. W., & Ahn, J. A. (2013). Moral sensitivity relating to the application of the code of ethics. *Nursing Ethics*. https://doi.org/10.1177/0969733012455563

Kim, Y. S., Park, J. W., You, M. A., Seo, Y. S., & Han, S. S. (2005). Sensitivity to ethical issues confronted by Korean hospital staff nurses. *Nursing Ethics*. https://doi.org/10.1191/0969733005ne829oa

Lützén, K. (1993). *Moral sensitivity: A study of subjective aspects of the process of moral decision-making in psychiatric nursing*.

Lützén, Kim, & Ewalds-Kvist, B. (2013). Moral Distress and its Interconnection with Moral Sensitivity and Moral Resilience: Viewed from the Philosophy of Viktor E. Frankl. *Journal of Bioethical Inquiry*. https://doi.org/10.1007/s11673-013-9469-0

Muramatsu, T., Nakamura, M., Okada, E., Katayama, H., & Ojima, T. (2019). The development and validation of the Ethical Sensitivity Questionnaire for Nursing Students. *BMC Medical Education*. https://doi.org/10.1186/s12909-019-1625-8

Nashori, F. (1997). *Psikologi island: Agenda Menuju aksi*. Penerbit Pustaka Pelajar.

Nora, C. R. D., Zoboli, E. L. C. P., & Vieira, M. M. (2017). Moral sensitivity in Primary Health Care nurses. *Revista Brasileira de Enfermagem*. https://doi.org/10.1590/0034-7167-2016-0453

Ohnishi, K., Kitaoka, K., Nakahara, J., Välimäki, M., Kontio, R., & Anttila, M. (2019). Impact of moral sensitivity on moral distress among psychiatric nurses. *Nursing Ethics*. https://doi.org/10.1177/0969733017751264

Öztürk, E. A., Şener, A., Koç, Z., & Duran, L. (2019). Factors influencing the ethical sensitivity of nurses working in a university hospital. *Eastern Journal of Medicine*, *24*(3), 257–264. https://doi.org/http://dx.doi.org/10.5505/ejm.2019.05025

Park, M. (2012). *The relationship of ethics education to moral sensitivity and moral reasoning of students in baccalaureate nursing programs of south korea*.

Range, L. M., & Rotherham, A. L. (2010). Moral distress among nursing and non-nursing students. *Nursing Ethics*. https://doi.org/10.1177/0969733009352071

Reza, I. F. (2013). Hubungan antara religiusitas dengan moralitas pada remaja di Madrasah Aliyah (MA). *HUBUNGAN ANTARA RELIGIUSITAS DENGAN MORALITAS PADA REMAJA DI MADRASAH ALIYAH (MA)*. https://doi.org/10.26555/humanitas.v10i2.335

Safaria, T. (2012). Peran religious coping sebagai moderator dari job insecurity terhadap stres kerja pada staf akademik. *HUMANITAS*. https://doi.org/10.26555/humanitas.v8i2.462

Trobec, I., & Starcic, A. I. (2015). Developing nursing ethical competences online versus in the traditional classroom. *Nursing Ethics*. https://doi.org/10.1177/0969733014533241

Tuvesson, H., & Lützén, K. (2017). Demographic factors associated with moral sensitivity among nursing students. *Nursing Ethics*. https://doi.org/10.1177/0969733015626602

Woods, M., Rodgers, V., Towers, A., & La Grow, S. (2015). Researching moral distress among New Zealand nurses: A national survey. *Nursing Ethics*. https://doi.org/10.1177/0969733014542679

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Original Research

The Study of Learning Outcomes under Thai Qualifications Frameworks for Higher Education (TQF: HEd) in Community Health Nursing Practicum Course of 4th Year Students, Faculty of Nursing, Naresuan University

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ABSTRACT

Introduction: This was descriptive research which aimed to study the learning outcomes based on the Thai Qualifications Frameworks for Higher Education (TQF: HEd)) after completing community health nursing practicum of 4th year students, the Faculty of Nursing, Naresuan University.

Methods: The samples were 113 4th year nursing students. Data were collected using the evaluation form of opinions on learning outcomes in six areas, namely morals and ethics, knowledge, intellectual skills, interpersonal skills and responsibility, numerical analysis, communication and information technology skills and professional practice skills. Data were analyzed using frequency distribution, percentage, mean and standard deviation.

Results: The research results showed that the mean score of the opinions of the 4th year students, Faculty of Nursing, Naresuan University, toward their learning outcomes based on the TQF: HEd was quite high in all six areas. The overall score was at a high level ($\bar{X}$=4.36, S.D. =0.42). The area with the highest level was morals and ethics ($\bar{X}$ = 4.50, S.D = 0.39), followed by professional practice skills ($\bar{X}$ = 4.48, S.D. = 0.49), interpersonal skills and responsibility ($\bar{X}$ = 4.43, S.D. = 0.53), numerical analysis, communication and information technology skills ($\bar{X}$ = 4.31, S.D. = 0.55), intellectual skills ($\bar{X}$= 4.31, S.D. = 0.52) and knowledge ($\bar{X}$ = 4.11, S.D. = 0.55), respectively.

Conclusion: The research results can be used as the guidelines for the development of learning outcomes and assessment in accordance with the TQF: HEd.

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INTRODUCTION

The Thai Qualification Framework for Higher Education (TQF: HEd) refers to the framework presenting the educational system of higher education in the country developed by the Office of the Higher Education Commission, which helps promote life-long learning. There are systems and mechanisms that assure the effectiveness of implementation of the TQF: HEd in producing graduates to achieve quality according to learning outcomes, consistent with the National Education Act and Amendments (Second National Education Act B.E. 2545), National Educational Standards, Higher Education Standards and Qualifications of Bachelor's Degree in Nursing Science Program B.E. 2560. According to the announcement of the Ministry of Education, learning outcomes have been established in accordance with the TQF: HEd and desirable graduate characteristics, covering six areas, namely morals and ethics, knowledge, intellectual skills, interpersonal skills and responsibility, numerical analysis, communication and information technology skills and professional practice skills. The objective is to produce graduates with knowledge, intellectual skills, responsibility, communication and interpersonal skills, and analytical skills who operate nursing practices with morals and ethics and adhere to professional ethics. Subsequently, the Office of the Higher Education Commission, the Ministry of Higher

Education, Science, Research and Innovation has committed to enhancing the quality of Thai education to be equal and accepted in the Association of Southeast Asian Nations (ASEAN) and at the international level. Therefore, the quality development tools that are recognized in ASEAN and at the international level as the effective tools in the development of the organization to excellence have been adopted. The policy of AUN-QA (Asean University Network Quality Assurance) has been adopted. It is the collaboration of the international higher education institutions in ASEAN and Education Criteria for Performance Excellence (EdPEx), which is the educational quality assurance in the European countries. Its objective is to establish the mechanisms for quality assurance and higher education standards of Thai higher education institutions in order to have quality and to be developed equivalent to the international standards. The administrators of each institution have to consider their institution's readiness and implement AUN-QA (Asean University Network Quality Assurance) or Education Criteria for Performance Excellence (EdPEx). However, the TQF: HEd must be implemented in every institution.

The main objective of the Community Health Nursing Practicum Course is to allow students to prepare their own learning plan and practice community health nursing. Management of teaching and learning to enhance students to think critically together with having nursing knowledge is important. Reflection should, therefore, be the teaching method used to promote critical thinking of students (Wichainate, 2014). For the management of teaching and learning focusing on practice, followed by reflection by the coach who gives advice, encouragement and suggestions for improvements (Panich, 2013), learning activities can be designed in many ways, such as conducting projects in groups so that group members are involved in analysis, determining objectives, planning and evaluating by themselves. From the literature review, it has been found that this type of teaching and learning can be applied in the management of nursing education as well as nursing teaching. It can be done by increasing abilities in practice which contribute to building nursing standards (Ahmed, Alostaz, & Al- Lateef Sammouri, 2016; Alotaibi, 2016; Fujino-Oyama, Maeda, Maru, & Inoue, 2016; Tao, Li, Xu, & Jiang, 2015). Therefore, in the Community Health Nursing Practicum Course the students are divided into a small group of 7-8 people. After that, they have to practice nursing practices in the training areas in rural and suburban communities. They will be trained to provide care for service recipients by focusing on promotion, prevention, treatment and rehabilitation of health at the individual, family, group and community levels. This gives the students the opportunity to learn on their own in the wider world by using the community health nursing process, including community assessment, diagnosis of community health problems, planning and practice in the form of project activities whereby students think together, and help each other conduct and evaluate project activities with the created tools (Intaranongpai & Kotchakot, 2017; Inthonhongpai, 2011). Previously, the Faculty of Nursing, Naresuan University realized the importance of educational management in response to Qualifications of Bachelor's Degree in Nursing Science Program B.E. 2560. The lecturers were promoted to integrate research into teaching and learning in the Community Health Nursing Practicum Course of the Bachelor of Nursing Science Program (Revised Curriculum, 2016), which is due for revision in the year 2020 in order to provide this course with information about improvements, new teaching methods that will make students achieve the learning outcomes defined in the learning outcomes of Community Health Nursing Practicum Course and to organize the teaching and learning process enhancing students to be able to integrate theoretical knowledge and relevant theoretical concepts in operation. The focus is on promoting students to learn and practice on their own; use critical thinking skills to solve problems systematically and be able to practice nursing practices in the community responding to the problems and needs of people in all levels. In the academic year 2019, the Community Nursing Academic Group, the Faculty of Nursing, Naresuan University, organized teaching and learning and expected that the obtained results would lead to the improvement of the Bachelor of Nursing Science Program in 2020.

For the course details, it was the course of practicum of the 4th year nursing students organized in the last semester of the Bachelor of Nursing Science Program, Academic Year 2019. It is about the community health nursing process which applies nursing science knowledge and focuses on nursing practices in family, schools, establishments, and communities. The Community Nursing Academic Group is responsible for the teaching and learning of this course. The 4th year students of the Faculty of Nursing will experience community survey, data collection, community diagnosis, health promotion projects in the community as well as health innovations focusing on strengthening families and communities by using appropriate resources and technology combined with local wisdom and self-care. In addition, students will gain experiences of occupational health nursing, family nursing, school health nursing and community health nursing. The Community Health Nursing Practicum Course of the Bachelor of Nursing Science Program in the academic year 2019 provided teaching and learning in accordance with the TQF: HEd. The results of the evaluation of teaching and learning of this course in the previous year obtained from the supervisor and the nurse mentor from each training area and the 4th Year nursing students revealed that the training duration was short. In addition, there were many assignments for professional practice, so the students had to quickly do these. This can reduce the quality of

assignments. Therefore, these issues were improved for the teaching and learning in the academic year 2020. The 4th year students of the Faculty of Nursing can search for knowledge from a variety of learning sources to respond to the learning outcomes according to the Qualifications of Bachelor's Degree in Nursing Science Program in terms of content, teaching methods, measurement and evaluation and to achieve learning outcomes as specified in the program learning outcomes of this course in all six areas. The student-centered learning process was more emphasized. There was an integration of theoretical knowledge which can be implemented. In addition, critical thinking skills and systematic problems solving skills responding to problems and needs of people at all levels were also enhanced. For these reasons, the researcher was interested in studying the opinions of the 4th year nursing students after finishing the Community Health Nursing Practicum Course of the Bachelor of Nursing Science Program (Revised Curriculum, 2016) regarding the learning outcomes in accordance with the Qualifications of Bachelor's Degree in Nursing Science Program in all six areas. The research findings were expected to be the guidelines for development of teaching and learning management to meet the learning standards as specified in the Thai Qualifications Frameworks for Higher Education and desirable characteristics of nursing students.

To study the levels of the learning outcomes in accordance with the TQF: HEd after completing the community health nursing practicum based on the perception of by 4th year students of the Faculty of Nursing, Naresuan University.

MATERIALS AND METHODS

This was descriptive research which aimed to study the learning outcomes based on the TQF: HEd) after completing the Community Health Nursing Practicum of the 4th year students of the Faculty of Nursing, Naresuan University. The data were collected in October 2019 and February 2020.

The population included 113 4th year nursing students in the academic year 2019 who completed the community health nursing practicum from Tambon Health Promoting Hospital in Bang Rakam District and Bang Krathum District, Phitsanulok Province. They were selected by a purposive sampling method. All 4th year students were asked to consider the results of the use of the TQF: HEd in six areas in teaching on the Community Health Nursing Practicum Course.

Inclusion criteria: 113 4th year students of the Faculty of Nursing, academic year 2019 who completed community health nursing practicum in Tambon Health Promoting Hospitals in Bang Rakam District and Bang Krathum District, Phitsanulok Province and agreed to participate in the study.

Exclusion criterion: 4th year students of the Faculty of Nursing, academic year 2019 who were sick and unable to respond to the questionnaire during the data collection period.

The researcher constructed the instruments, including the general information questionnaire consisting of five questions asking about gender, age, GPA, group of students, Tambon Health Promoting Hospitals where the students practiced community health nursing, and the questionnaire assessing the opinions, consisting of 36 questions based on the TQF: HEd of Community Health Nursing Practicum Course of the Bachelor of Nursing Science Program (Revised Curriculum, 2016), covering six areas, namely morals and ethics, knowledge, intellectual skills, interpersonal skills and responsibility, numerical analysis, communication and information technology skills and professional practice skills. It was adapted from the nursing practice evaluation form of the Faculty of Nursing, Naresuan University, 2016. The answers were 5-point rating scales where 5 means the highest level; 4 means high level; 3 means moderate level; 2 means low level and 1 means the lowest level. The reliability of the instruments was tested by the Cronbach's alpha coefficient which was 0.94.

The mean score criteria of Prakong Krannasoot (Krannasoot, 1995) were employed for interpretation. The interpretation was divided into five levels as follows. 4.50 - 5.00 = the highest level; 3.50 - 4.49 = high level; 2.50 – 3.49 = moderate level; 1.50 – 2.49 = low level; 1.00 – 1.49 = the lowest level.

After the research had been approved by the Human Research Ethics Committee, Naresuan University, the researcher collected data on her own. The data were collected in October 2019 and February 2020. The researcher distributed the questionnaires to the population and explained to the population the research objective and the details in answering the questionnaires. The population returned the questionnaires to the researcher after completing them. The researcher checked the completeness of all questionnaires. The responses were obtained from all 113 people, accounting 100%.

Data were analyzed by using a statistical package program and descriptive statistics to find out mean and standard deviation.

The researcher protected the rights of the population by explaining the details of the research objective, data collection process, research methodology and benefits from the research; asking for cooperation in answering the questionnaires and clarifying the rights of the population in accepting or denying participating in this research, which would not affect the evaluation of the course. The researcher kept the information confidential and only an overview of the data would be presented. First and last names of the population would not be revealed. Once the population accepted to participate in the study, they had to sign the consent form. This study was approved by the Human Ethics Committee of Sciences, Technology and Human Sciences Program, Naresuan University. Code of Ethics was NU-IRB 4452.

Table 1. Personal characteristics of 4th year nursing students (n = 113)

Status	n	%
Sex		
Male	8	7.1
Female	105	92.9
Age		
18 years	1	0.9
19 years	1	0.9
21 years	26	23.0
22 years	56	49.6
>23 years	29	25.6
GPA		
2.00-2.50	1	0.9
2.51-3.00	37	32.7
3.01-3.50	64	56.7
3.51-4.00	11	9.7

RESULTS

General information: 113 samples aged between 21-23 years. The cumulative GPA of most of the population was between 3.01-3.50 (56.6%), followed by the cumulative GPA of between 2.51 - 3.50 (32.7 %), the cumulative GPA of between 3.51 - 4.00 (9.7%) and the cumulative GPA of between 2.00 - 2.51 (0.9%) as shown in Table 1.

The learning outcomes of the students according to the TQF: HEd: The students' score toward their learning outcomes in the Community Health Nursing Practicum Course was at the highest level. The area with the highest score was morals and ethics ($\bar{X}$ = 4.50, S.D. = 0.39). The other five areas rated in the high level were knowledge ($\bar{X}$ = 4.11, S.D. = **0.55**), intellectual skills ($\bar{X}$= 4.31, S.D. = 0.52), interpersonal skills and responsibility ($\bar{X}$ = 4.43, S.D. = 0.53), numerical analysis, communication and information technology skills ($\bar{X}$ = 4.31, S.D. = 0.55) and professional practice skills ($\bar{X}$ = 4.48, S.D. = 0.49), as shown in Table 2.

DISCUSSION

The overall perceived learning outcomes based on the TQF of 4th year students of the Faculty of Nursing, Naresuan University, after completing community health nursing practice was at a high level ($\bar{X}$ = 4.36, S.D.= 0.42). This was consistent with previous studies (Intaranongpai & Kotchakot, 2017; Janjaroen, 2011; Wattanatornnan & Sangsongrit, 2017). The Community Nursing Academic Group, the Faculty of Nursing, Naresuan University, used the assessment results from the supervisors, the mentors and the students to improve the teaching and learning management, knowledge management and preparation of nursing students before starting to practice in the training areas. In addition, morals and ethics were included in lessons. The students were encouraged to adhere to the principles of the sufficiency economy and search for new knowledge. There were supervisors and nurse mentors in the training areas. There was the availability of training resources and evaluation tools consistent with learning outcomes. There was support of the use of information technology in searching for health information and continuous self-development. There was an increase of the use of online media while practicing for communication. The students were encouraged to think and solve problems creatively. Therefore, the students had skills in collaboration with local health teams and were able to adapt themselves by being open to new things. For these reasons, the students' learning outcomes were in accordance with the TQF: HEd after practicing nursing practices at a high level. This is in line with the integrated teaching and learning in accordance with the educational management and learning process specified in the National Education Act. The integrated learning process focuses on being student-centered and relies on transfer of learning. The students understand content in a holistic way, see the relationship between subjects and reduce duplication of content in each subject. They can also learn from real experience. Knowledge, moral process and desirable characteristics are combined to increase the potential of the students unlimitedly because they have learned how to proceed lifelong learning.

When each aspect had been considered, the highest level of the students' opinions on learning outcomes was on morals and ethics ($\bar{X}$ = 4.50 S.D. = 0.39). In addition, the sub-competencies that were at the highest level were as follows. 1) Being able to distinguish rightness, goodness and badness ($\bar{X}$ = 4.74, SD = 0.44): The example of behaviors was that the students learned that, when working in every community, everyone must be good, honest, scarified and not steal things. 2) Respecting human value and dignity ($\bar{X}$ = 4.85, S.D. = 0.36): The example of behaviors included respecting service recipients in the community, not disclosing service recipients' information, not lying to service recipients while working in the community, being a good role model in terms of both self-care and community nursing practices for service recipients at all levels, such as practicing community health nursing with intention

Table 2: Learning outcomes according to the Thai Qualifications Frameworks for Higher Education of Community Health Nursing Practicum Course, the Faculty of Nursing, Naresuan University (n=113)

Learning Outcomes: LO	Opinions toward learning outcomes		
	$\bar{x}$	S.D	Level of learning outcomes
Morals and ethnics			
Having knowledge and understanding of religion, ethics and professional ethics	4.28	0.73	High
Being able to distinguish rightness, goodness and badness	4.74	0.44	Highest
Respecting for human value and dignity	4.85	0.36	Highest
Being responsible for own actions, having morals and ethics in living life	4.55	0.56	Highest
Being disciplined and honest, sacrificed, patient and diligent	4.39	0.62	High
Complying with professional ethics and being capable of dealing with ethical problems in daily life and in working in the nursing profession	4.48	0.60	High
Being a good role model for others in living life and working	4.16	0.68	High
Encouraging patients / service recipients to know and understand their rights in order to protect their rights that might be violated	4.56	0.57	Highest
Being aware and conscious of being Thai	4.44	0.60	High
Overall of morals and ethnics	4.50	0.39	Highest
Knowledge			
Having broad and systematic knowledge and understanding of the principles and the theories of the essence of science which is the basis of life and health science	3.97	0.67	High
Having knowledge and understanding of the essence of nursing science, health system and factors affecting social change and health system	4.05	0.65	High
Having knowledge and understanding of the essence of the process of community health nursing and its implementation	4.19	0.70	High
Having knowledge and understanding of the essence of the knowledge acquisition process and knowledge management	4.04	0.68	High
Having knowledge and understanding of the essence of nursing information technology	4.12	0.69	High
Having knowledge and understanding of culture, changing situations of the country and the world society	4.28	0.71	High
Overall of knowledge	4.11	0.55	High
Intellectual skills			
Recognizing self-potential and weaknesses in order to proceed self-development	4.43	0.65	High
Being able to search and analyze data from a variety of data sources	4.40	0.67	High
Being able to use information and evidence as references and to solve problems critically	4.44	0.61	High
Being able to analyze and think systematically by using professional and related knowledge	4.22	0.65	High
Being able to use appropriate scientific and research processes and innovations	4.18	0.69	High
Being able to develop effective methods for solving problems in accordance with the changing health situations and contexts	4.17	0.73	High
Overall of intellectual skills	4.31	0.52	High
Interpersonal skills and responsibility			
Having the ability in professional adjustment and creative interaction / relations	4.44	0.68	High
Being able to work in a team as a leader and team member	4.50	0.62	Highest
Being able to express leadership in driving positive change in the organization	4.21	0.68	High
Having social responsibility and responsibility for professional development	4.56	0.55	Highest
Having skills to learn in an intercultural or multicultural society	4.44	0.68	High
Overall of interpersonal skills and responsibility	4.43	0.53	High
Numerical analysis, communication and information technology skills			
Appropriately applying logic, mathematical and statistical techniques in nursing	4.09	0.71	High
Converting information to quality news and being able to read, analyze, and transmit data	4.27	0.68	High
Effectively communicating in Thai language, including speaking, listening, reading, writing and presenting	4.36	0.72	High
Using basic computer programs	4.35	0.73	High
Selecting and using information presentation format	4.47	0.69	High
Overall of numerical analysis, communication and information technology skills	4.31	0.55	High
Professional practice skills			
Practicing nursing skills in a holistic manner by applying science and art in nursing	4.31	0.66	High

Learning Outcomes: LO	Opinions toward learning outcomes		
	x̄	S.D	Level of learning outcomes
Practicing health promotion, disease prevention, medical treatment, symptom relief and rehabilitation	4.32	0.60	High
Practicing nursing with kindness and generosity by adhering to morals, ethics, law and patients' rights.	4.72	0.50	Highest
Practicing community health nursing with consideration of individual and cultural diversity	4.66	0.52	Highest
Showing leadership in operations and management of nursing team and multidisciplinary team and working in the community and in the community health service unit with a volunteer spirit and a human heart	4.47	0.74	High
Overall of professional practice skills	4.48	0.49	High

and diligence and behaving appropriately while working in the community. 3) Being responsible for own actions, having morals and ethics in living life (X̄=4.55, S.D. = 0.56). The findings of this study were consistent with the studies of Janjaroen (2000) and Chanchareun and Amphansirirat (2012) which found that the nursing students' opinions on learning outcomes in morals and ethics were at the highest level (X̄=4.38, S.D.= 0.46).

The overall knowledge was at a high level (X̄ = 4.11, S.D. = 0.55), and all sub-competencies of the learning outcomes were rated at a high level, such as having knowledge and understanding of culture, changing situations of the country and global society (X̄ = 4.28, S.D. = 0.71). For example, they could understand the social and cultural context of each area and the situation of health changes at both a global level and in Thailand. In addition, the Community Nursing Academic Group had prepared the students and organized orientation for them before they went to practice in the community. So, the perceived knowledge of the students was a high level. This was consistent with the study by Wattanatornnan (2017) on the effect of skill-enhancing activities on knowledge and the confidence of the students of Thai Red Cross College of Nursing, enrolling in Nursing Care of Adult and Aging Practicum II. It was found that in terms of knowledge, most of the students perceived that skill- enhancing activities allowed them to be able to apply knowledge before starting practicum.

The overall intellectual skills were at a high level (X̄ = 4.31, S.D. = 0.52). The competency with the highest level was being able to use information and evidence as references and to solve problems critically (X̄ = 4.44, S.D. = 0.61). For the teaching and learning management of the Community Health Nursing Practicum Course, activities were organized for the students to apply knowledge from nursing science and other fields of science by using the nursing processes in individual, family, and community nursing, covering physical and psychosocial aspects in health promotion, disease prevention, medical treatment and rehabilitation because community health nursing practicum is practice in a real area. A project for human health was also organized for the students, so that they could apply scientific processes and create appropriate innovations for searching and analyzing data in various sources in order to find out the solutions to health problems that change according to socio-cultural context. Therefore, the learning outcomes of the students on knowledge and intellectual skills were at a high level.

The overall interpersonal skills and responsibility were at a high level (X̄ = 4.43, S.D. = 0.53). The competency with the highest level in this area was having social responsibility and responsibility for professional development (X̄ = 4.56, S.D. = 0.55) and being able to work in a team as a leader and team member (X̄ = 4.50, S.D. = 0.62). For the community health nursing practicum, it must be operated as teamwork. The students had to collaborate with the multidisciplinary team, community leaders, Tambon Health Promoting Hospitals, village health volunteers and the public sector. For this reason, the students could build relationships and adapt themselves to the socio-cultural context of the area in order to be able to work together with others. While practicing, the students were divided into 7-8 people per group. The roles and responsibilities were shared to all students. They had to play the roles of both leaders and followers, which might not be in accordance with their abilities. However, everyone could perform the assigned tasks. They were developed by themselves. Reflection with the lecturers and the group members was also organized. In addition, the students also lived together in the community throughout the practice period. Therefore, the learning outcome of interpersonal skills and responsibility was at a high level.

The overall of numerical analysis, communication and information technology skills was at a high level (X̄=4.31, S.D. =0.55), and all sub-competencies of the learning outcomes were rated at a high level. This might be because the students had the skills in searching for information and using information technology. They were also able to manage information, communication, and presentation using electronic media. They also had skills in using basic computer programs. This was in accordance with Kungvon and Suksaen (2014) who found that the students assessed themselves on the learning outcomes in numerical analysis skills, communication

and the use of information technology at a high level (X̄=3.79, S.D. =0.71).

In terms of professional practice skills, the students' opinions on learning outcomes in this aspect were at a high level (X̄=4.48, S.D. =0.49). Also, the first two learning performance aspects rated with the highest level were as follows. 1) Practicing nursing with kindness and generosity by adhering to morals, ethics, law and patients' rights (X̄=4.72, S.D= 0.50): The example of behaviors included expressing concern for service recipients, talking to service recipients in a friendly manner and providing consistent care for patients. 2) Practicing community health nursing with consideration of individual and cultural diversity (X̄=4.66, S.D= 0.52): The example of behaviors included not violating privacy of patients, not revealing information of patients, doing activities based on the differences of each service recipient, organizing health promotion activities in the community, providing health knowledge and demonstrating health care practices. These results were in accordance with Janjaroen (2011) and Kungvon and Suksaen (2014) who found that graduate quality based on the TQF: HEd n terms of professional practice skills was at a high level (X̄=3.95, S.D.= 0.42).

CONCLUSION

The research results can be used as the guidelines for the development of learning outcomes and assessment in accordance with the Thai Qualifications Frameworks for Higher Education (TQF: HEd).

Recommendations for application of research findings in teaching and learning management are as follows. 1) Teaching strategies and learning evaluation should be developed in accordance with the context of the course. 2) The research findings should be used as the guidelines for improving learning outcomes and evaluation in accordance with the TQF: HEd in order to improve the curriculum efficiently.

Recommendations for further research: The comparative study on learning outcomes of the Community Health Nursing Practicum Course perceived by nursing students, mentors and supervisors should be conducted.

REFERENCES

Aunban P. Evaluation of teaching in family and community nursing practicum. Journal of Nursing and Education 2559; 9(1):113 - 126. (In Thai)

Ahmed, W. A. M., Alostaz, Z. M. Y., & Al-Lateef Sammouri, G. A. (2016). Effect of self-directed learning on knowledge acquisition of undergraduate nursing students in Albaha University, Saudi Medical Science Arabia. AIMS, 3(3), 237-247.

Alotaibi, K. N. (2016). The learning environment as a mediating variable between self-directed learning readiness and academic performance of a sample of Saudi nursing and medical emergency students. Nurse Education Today, 36, 249–254.

Chanchareun K, Amphansirirat K, Characteristic Thai qualifications framework for higher education of the graduate of the bachelor of nursing science programmed from Boromarajonani College of Nursing Songkhla. Songkhla:Boromarajanani College of Nursing Songkhla, 2012. (In Thai)

Fujino-Oyama, Y., Maeda, R., Maru, M., & Inoue, T. (2016). Validating the Japanese self-directed learning readiness scale for nursing education. Journal of Nursing Education, 55(2), 65–71.

Hiemstra, R. (1996). Self-directed learning. In A. C. Tuijnman (Ed.), International encyclopedia of adult education and training (pp.472-433). Oxford: Pergamum.

Hiemstra, R., & Brockett, R. G. (1994). From behaviorism to humanism: Incorporating self-direction in learning concepts into the instructional design process. In H. B. Long, and Associates, New ideas about self-directed learning. Oklahoma Research Center for Continuing Professional and Higher Education of the University of Oklahoma.

Inthonhongpai, S. (2011). Nursing process: a tool for holistic health managers to evolve and improve primary health (5thed). Maha Sarakham: Mahasarakham University Press.

Intaranongpai S, Kotchakot J. The learning outcomes under the qualifications framework for higher education (TQF) in community nursing practicum subject, Bachelor of nursing science. Journal of the Police Nurses 2017; 9 (2):105-115. (in Thai)

Janjaroen, K. (2011). Characteristic Thai qualifications framework for higher education of the graduate of the bachelor of nursing science programme from Boromarajonani Bollege of Nursing Songkhla. Retrieved from http://tdc.thailis.or.th/tdc.browse.pbh

Kungvon. J., & Suksaen, N. (2014). The relationship between satisfaction towards teaching- learning process and learning outcomes of Thailand quality framework in maternal- newborn and midwifery nursing practice 2, third year Air Force Student Nurses. Journal of the Police Nurses, 16(2), 134–143.

Krannasoot, P. (1995). Statistics for Behavioral Science Research (2nd ed). Bangkok: Chulalongkorn University.

Office of Higher Education Commission. (2009) Thai Qualifications Framework for Higher Education B.E. 2552 (2009). Document for the workshop on the qualifications framework: quality development of curriculum and course syllabus, September 30 - October 2, 2009 at the Radisson Hotel, Bangkok.

Panich, V. (2013). How does learning occur? Bangkok: S. R. Printing Massproduction Company Limited.

Thailand Nursing and Midwifery Council. Regulations of Thailand Nursing and Midwifery Council on Knowledge Ex̄amination for Registration and Licenses of Nursing Profession, Midwifery or Nursing and Midwife (Version 2) B.E. 2551 (2008).

The Higher Education Committee. (2017). The announcement of the Ministry of Education:Qualifications bachelor's degree in nursing 2017. Bangkok: Ministry of Education. (In Thai)

The Higher Education Commission. Thai Qualifications Framework for Higher Education (Version 2) B.E. 2554 (2011). Government Gazette. August 31, 2019.

Srisa-ard B.(2013). Fundamental Research. Bangkok: Suviriyasarn. (In Thai)

Sirisomboon P. Characteristics of graduates according to Thai qualifications framework for higher education (TOF:HEd) in Southeast Bangkok College, 2013-2014 (Batch 15). Southeast Bangkok Journal 2016; 2(2): 55-67. (in Thai)

Tao, Y., Li L., X̌u, Q., & Jiang, A. (2015). Development of a nursing education program for improving Chinese undergraduates' self-directed learning: A mix̌ed-method study. Nurse Education Today, 35(11), 1119–1124

Wichainate, K. (2014). Reflective Thinking: Teaching Students to Develop Critical Thinking. Journal of the Police Nurses, 16(2), 187-199.

Wattanatornnan S., Sangsongrit N. Effect of a nursing skills enhancement program on knowledge and confidence in nursing students enrolling in nursing care of adult and aging practicum II. Journal of the Royal Thai Army Nurses 2017; 18(1): 157-166.

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Original Research

How Do People Living with HIV Acquire HIV Related Information: A Qualitative Evaluation of Jakarta Setting

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ABSTRACT

Introduction: People living with HIV are fully aware of their risk behavior and future threats that might arise. The rapid progress of HIV serves the population with many options of healthcare services and treatments. Insufficient knowledge and information will only lower the outcomes of HIV eradication efforts. The ultimate goals to eradicate HIV are to upscale status notification and treat all with appropriate antiretroviral and viral suppression, but it needs sufficient information to administer. Programs and interventions have already been proposed, but an inquiry is needed to ensure all the information is actually there. The study aimed to explore the experience of people living with HIV acquiring HIV-related information.

Methods: This study used phenomenological qualitative study and in-depth interviews were conducted to 12 people living with HIV. Semi-structured questions were delivered to all participants which explored their tangible experience in terms of nurturing sufficient HIV-related information.

Results: The study found four consequential themes: non-government organizations play a major role in HIV education, peers are a comfortable platform to discuss, it is all over the media and healthcare personnel are a source of knowledge.

Conclusion: The distribution of HIV information and knowledge is now widespread. This situation marks part of the success in fighting HIV. Remarkable attempts can be maintained by optimizing the viable option of information delivery.

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INTRODUCTION

As of today, at least 32 million people have died as devastating consequences of HIV and AIDS since the start of the epidemic (UNAIDS, 2019). In order to achieve the 2030 target urgent pressing needs have to be fulfilled (UNAIDS, 2020). Various strategies will be provided with global solidarity, evidence-based action and multi stakeholders' partnerships in order to attain HIV treatment for all (UNAIDS, 2014). The progress toward sustainable development goals of health and wellbeing reported that there is strong and steady national and global financial commitment, the acceleration of evidence-based HIV prevention, testing and treatment programs availability among different countries. The total incidence rate of HIV incidence has declined by 22% since 2010 (UN, 2019). Mortality caused by AIDS-related disease is also declining globally, but both of those achievements are far away from the target. HIV prevention, testing and treatment needs to be accelerated and focus on analyzing the gap of implementation (World Health Organization, 2019).

The HIV burden is still haunting most of countries worldwide, particularly for low and middle income countries (Haakenstad et al., 2019). The HIV global statistic data show 37.9 million people are now living with HIV, 1.7 million people are newly infected with the virus and 770.000 of them died caused by HIV-related illness. It expected around 24.5 million people living with HIV are accessing antiretroviral therapy (UNAIDS, 2019). There are 13 million numerical gaps

of people living with HIV not possessing antiretroviral treatment. Indonesia has been known as the fourth largest number of HIV new infections per year. Indonesia is the only country in the Asia Pacific region which has rapid increasing of HIV prevalence (Januraga et al., 2018). In the HIV statistics, Indonesia alone recorded 640,000 people affected by the virus, at least 46,000 people who are newly infected in the most recent year, and 38,000 of them have died of AIDS-related disease (UNAIDS, 2018a).

The 90-90-90 target demands to end HIV by achieving 90% population knowing their status, 90% HIV positive persons engaging in antiretroviral and 90% people living with HIV on antiretroviral treatment virally suppressed. It is not easy to achieve; the target needs to improve knowledge and reduce stigma by inserting sufficient knowledge (Maddali, Gupta, & Shah, 2016). The programs focused specifically for key populations are aimed to provide evidence-based recommendation and increasing awareness of the HIV issues and needs (WHO, 2017). In most studies it was reported there was a wide variety of HIV-related intervention types (Faust & Yaya, 2018). Health education of HIV-related information has been recognized to deliver remarkable outcomes in improving HIV knowledge, diagnosis and treatment (Martínez Sanz et al., 2019), also contributing in reducing stigma (Nyblade et al., 2019).

It has been noticed that the state of HIV knowledge improvement is growing, but the trend is still minimal. A study in Sub-Saharan Africa found only close to half of the research population retained comprehensive HIV knowledge (Chan & Tsai, 2018). In accessing HIV-related information, key populations often face a complex challenge. The lack of guidance and follow-up of information, discriminatory acts among information providers, uncomfortable services and inadequacy of privacy insurance are the common reasons for key populations to ignore HIV-related information seeking (Liu et al., 2016). In Indonesia, HIV knowledge is considered low with only 11.37 per 1000 population among aged 15-24 (UNAIDS, 2018b). It is crucial to assess the implementation gap in providing HIV-related information to boost the reach of key population in its acquisition. The evaluation of data is important to guide the HIV response in providing comprehensive and high quality performance of information providers (Hakim et al., 2018).

HIV-specific health literacy also contributes as important marking in the HIV behavior and decision of the key populations. Interventions are improving the health literacy of people living with HIV with low health literacy and bringing up better health behavior and outcomes (Wawrzyniak, Ownby, McCoy, & Waldrop-Valverde, 2013). Health literacy drives health cognition, decision and behavior; poor health literacy will lead to lack of access to healthcare services and appropriate treatments, deriving from poor health education (Palumbo, 2015). The role of HIV health education is vital in terms of developing the health literacy of the people living with HIV. HIV health literacy is an important mediator between HIV-related information and the outcomes (Tique et al., 2017). One of the notable HIV specific health literacy interventions is health education by using technology, known as e-health literacy. It is proven to promote HIV-related knowledge, medication adherence and individual self-management of the people living with HIV (Perazzo, Reyes, & Webel, 2017).

In the current time, there are various new and innovative ways to confront the HIV epidemic. These interventions have been developed and implemented with the focus to increase individual knowledge, risk perception and motivation to avoid risky behavior. HIV health education has been conducted by using various methods to contribute to antiretroviral adherence and viral suppression (Wawrzyniak et al., 2013). Evaluation is necessary to build better capacity of the healthcare system in providing information and care for the populations. Evaluation also criticized the learning focus of the community development (Phillips et al., 2019). Evaluation of HIV health education interventions is crucial to drive better understanding in facing the challenges and to redesign more effective strategies in the future. Evaluation also creates better capture of complex information (Iskarpatyoti, Lebov, Hart, Thomas, & Mandal, 2018). The comprehensive tools to record HIV knowledge remain lacking and there is a need to design comprehensive assessment (Hooshyar et al., 2017). Evaluation of the interventions to boost HIV-related knowledge and literacy is an important measure to break through the obstacles. This study aimed to evaluate the experience of people living with HIV in acquiring HIV-related information.

MATERIALS AND METHODS

The design of the study was using qualitative study with phenomenological approach. This type of research design provides thick description of the phenomenon experienced by the people living with HIV in acquiring HIV-related information. This study interpreted the narrative situation of the information access for people living with HIV. This design was used to fully understand the uniqueness and concreteness of the representation of the HIV information access situation in the healthcare system according to the subjects' perspective. It will illustrate and individualize the genuine life experience of the people living with HIV in acquiring HIV related information. This study aimed to explore the complex and varied life experiences of people living with HIV in acquiring HIV-related information. It is expected to describe the particular form of interaction between people living with HIV and the healthcare system available regarding to HIV-related information.

Table 1. Participant Characteristic

Participant Code	Age (years old)	Education	Length of Disease (in years)	Risk Population	Gender
P1	29	High School	10	IDU	Male
P2	30	Elementary	9	IDU	Male
P3	31	Junior High	7	Heterosexual	Male
P4	32	Junior High	7	IDU	Male
P5	34	High School	7	Prisoner	Male
P6	34	High School	7	IDU	Male
P7	34	High School	5	Prisoner	Male
P8	34	Bachelor	5	Heterosexual	Female
P9	39	High School	7	IDU	Male
P10	41	Bachelor	2	IDU	Male
P11	22	High School	1	MSM	Male
P12	31	Diploma	1	MSM	Male

*IDU= Injecting Drug User
*MSM= Men Who Have Sex with Men

The study was conducted in Jakarta, Indonesia, by involving a non-government organization in HIV activism. Jakarta has 38 active non-government organizations and foundations, which entail to the HIV movement arrangement. Two notable non-government organizations were enlisted as prospective participants for the study. This qualitative study used purposive sampling method to choose participants to contribute in the research. The participants were considered as commonly knowing the research situation and providing an overview of life experiences in acquiring HIV-related information. Qualitative research does not require a rigid standard in terms of a minimum sample, but the number participants depends on the repetitive information presented. Data saturation examines the maximum participants that could be used for the research. The participants' criteria of the study were people living with HIV who have experienced healthcare service utilization, obtained HIV-related information, be willing to tell and consent to the research issue. The study used 12 participants whom provided narrative data of how people living with HIV acquire HIV-related information.

The data collection in this study used in depth interviews with open-ended and semi-structured questions to all participants by the primary author. All data were recorded to tape recorder for verbal data and field notes for non-verbal expressions. The conversation took 30-45 minutes for each participant with a comfortable atmosphere in a dedicated room, open posture, private one-on-one interview and appropriate tone of speech. The questioning was triggered by asking how do people living with HIV acquire HIV-related information. The interview terminated when the data attained the information depth justified by the researcher as the instrument itself. The conversation ended by ensuring the physical and psychological condition of the participant. The data saturation marked by the repetition of information at 12 participants. The recorded data were then transferred into a soft computer file and saved in a specific and secured folder. Afterwards, the data were listened to repeatedly and shifted into a verbatim transcript. The transcripts and field notes were combined to complement the suitability of the data collected.

The transcripts were then sorted to find significant statements of the participants. These were then classified into categories, which were grouped into themes and subthemes. The themes were written in a thoughtful and representative narrative form, to make it easy to understand the experience. At the end, the research concluded four consequential themes. The analysis and the results were obliged to the qualitative data validities by ensure credibility, transferability, dependability, and conformability. This study was committed to the ethical guidelines and consideration in all research activities. Ensuring that no one was harmed or obtained negative impacts was crucial. This research strictly provides autonomy, beneficence, non-maleficence, confidentiality and justice. This study also committed to protect the participants involved. This study was reviewed by the Universitas Indonesia Ethical Council Committee and declared as ethically feasible to be conducted. The study concluded four consequential themes describing how people living with HIV acquire HIV-related information.

RESULTS

The participants in this study were 12 people living with HIV using healthcare services in Jakarta, Indonesia. The 12 participants participated voluntarily in in-depth interviews conducted during the research process. The 12 participants acknowledged their positive status and performed openness to be involved in the study and in

cooperatively answering the questions during interview. Participants did not express objections or unwillingness in providing information in semi-structured questions. All quoted texts in the manuscript were originally in Bahasa Indonesia and translated into English to fulfill publication requirements. The characteristics of the participants are displayed in Table 1 below (attached at the last page of the manuscript).

The study found four consequential themes: non-government organizations play a major role in HIV education, peers are a comfortable platform to discuss, it is all over the media and healthcare personnel are a source of knowledge. The details of each theme are explained as follows:

Theme 1: Non-government Organizations Play a Major Role in HIV Education

A bon-government organizations (NGO) was recognized as a platform which contributed in HIV-related information for the most participants. They realized their risky behavior and what would be the consequences for them. Non-government organization provided them with essential information and knowledge related to HIV. The NGO interacted with participants through HIV seminars conducted by the organization. Also, the organization actively came to participants to deliver the message and information. The organization activists offered strong advice to prevent disease transmission and pointed out the importance of HIV testing to get knowledge of the participants' serostatus. One participant admitted that he was persuaded to go for a voluntary counselling test after the organization member approached him and made him understand the potential threat of the disease. The statement of the participant is documented below:

"At that time, as I remember there was a foundation, I guess, which I didn't really know the details, but I was sure it was related to the HIV activism movement. They came to us and explained everything about the risks and the importance of 'VCT' (Voluntary Counselling Test). They said they also provided it and asked us to do the check. Afterwards I was found to be positive." (P1)

Another participant told that he was really aware of the situation because one member of the organization came to him and explained the details of HIV. Then, with a gentle smile and rounded eyes, he recommended him to access the VCT in the healthcare facility nearby, as, recalling his expression, the participant commented as follows:

"So, this member of the organization was explaining it (HIV-related information) completely to me. It made me understand quite a bit though about the disease. He recommended me to check my status by accessing the VCT in the nearby healthcare facility. He gave me the contact and I went for a status check." (P2)

Another participant also shared the same experience. This participant said that he went to a HIV seminar held by the organization. Of his own volition, he decided to gain more knowledge about the disease and got to know the risks that he might have. He explained:

"I saw there was a free Seminar about HIV disease in a flyer back then conducted by a HIV NGO. It had been my curiosity at that time, I guess I had the risk, but I was not sure. So, I went to the seminar and got a full understanding that my risks were real." (P7)

Theme 2: Peers are a Comfortable Platform to Discuss

Four participants in this study stated that they acquired HIV related information from their peers. They affirmed that peers were an important circle in HIV-related information distribution. Peers optimally constructed their understanding of the disease and acknowledged them as a person with a wide spectrum. They felt accepted in considering themselves as an alter ego of their peers. Peer provided them with palpable experience and information so they felt connected to each other. Peers are a platform that allows them to express what they feel freely and without boundaries. The participants may discuss the hidden situation and information that often make them shy to tell others in terms of the secrecy. Peers also become an important role model for the participants to see the whole truth of the disease and the intricacy of HIV-related knowledge. Below is the statement of a participant:

"Back then, I had a friend, a childhood friend. Eventually he came with his secret story, which shocked me. He told me that he had HIV, after that I could not resist my own situation. I asked him so many things and he tried to make me understand by explaining all the information and then I realized I should have a check. He convinced and accompanied me to the Public Health Center nearby." (P1).

Another participant also told the same experience. He knew the information from his friend, who told him of a place to get a check. "…My friend told me don't be afraid, just go to 'Pro' (name of a notable private laboratory) they often not bother our lives that much…" (P5). Another participant also said the same thing. He knew a friend that might have sufficient information about HIV. He felt free to speak about the situation and curiosity that he had. He admitted that he never got a negative judgment from his friend, which made him very relieved. Through his friend's experience, the information he provided was also easy and comprehensive to understand. Passionately speaking, the participant said as follows:

"I heard one of my friends had the same thing, and he must know many more things than. I approached him and he told me everything I needed to know. I hid nothing, then I went to the hospital that he also went to." (P4).

Theme 3: It is All Over the Media

All of the participants disclosed that the media also gives them information insight about HIV. Even though it was not enough information to convince them, they acknowledged it was quite helpful in transmitting HIV-related information. The media

provided them brief and straightforward information that led them to access more HIV knowledge and information. Printed media, such as posters, flyers, newspapers and magazines, were the resources to get the information. Online media and website based made it easier for them to obtain such information. One participant states that he got the information from printed media such as poster and billboard. It briefly gave him the essential information about HIV.

"When I walked around, sometimes I found a printed poster on the wall that told about HIV. I stopped for a while and read. I could feel the risks in me, I knew it. Also, on the billboard they also put the information there, not much but enough for a basic understanding." (P2)

Another participant affirmed that he got the information online from the electronic media on the internet. He tried to surf the information and there are very many resources if you want to seek HIV-related Information. With a smirking smile, the participant told as follows:

"There are so many of them (HI- related information) on the internet, you could just click and you will find it easily. There are websites that completely tell you about the disease and I guess it is also provided by the NGO." (P3)

Theme 4: Healthcare Personnel as Source of Knowledge

Four of the participants also commented that they got the HIV-related information from the healthcare personnel. Healthcare personnel actively came to them directly and distributed the knowledge by themselves. They approached the participants at their 'hot spot' group gathering places. They realized that it might be a regular program made by the healthcare providers to reach out to the key populations. The healthcare personnel convinced the participants because they had sufficient knowledge and knew everything about HIV. They felt that they were the experts. Healthcare personnel also knew them appropriately because had been interacting with them for quite some time. One of the participants said:

"The healthcare personnel came to us at that time. They explained about the risks and the disease. They seemed very expert about this. We got convinced, eventually and they also provided VCT and then we tried. That time, I then knew my status was positive." (P8)

Another participant told that ,after all the risks that they have been taking it was useful to have relevant information from other sources. They believed that the doctor and nurses convinced them to take a test and they obtained all the important and relevant information.

"I went to the doctor and asked more about myself. He explained many things to me and I got convinced. He asked me to get tested, and I did." (P11)

"I met the nurse; he told me anything that he knew about HIV. I believed in him, He explained it in such detail. Every information I've got from anywhere, I always cross-check on him. It feels relieving when I talk to him to justify any information I've got." (P12).

DISCUSSION

The study tells us the access of HIV-related information is now broadened and well-provided. Key populations may reach all necessary information by addressing various choices. The active or non-active delivery ways used by the providers have equipped high-risk behavior population with basic essential knowledge. It is expected that, with certain knowledge, this will lead to better-desired outcomes of the disease prevention, treatment and care. Finer understanding of a population's perspective on HIV health education is important to get to know which are the best ways of delivery to improve HIV knowledge (Stonbraker et al., 2018). The participants on the study acknowledge HIV non-government organizations contribute in a large scale. Non-government organizations focusing on HIV are recognized as outstanding community lead groups to respond to health challenges and gaps (Lo, 2018). Non-government organizations have contributed in HIV progressive changes till the current time (Wang et al., 2016). The struggles that have been proved by this institution are undoubted. Study acknowledges that non-government organizations implement a holistic approach in all program activities, ensuring confidentiality, nurturing professionals and cultural competence, and strictly preserving equality and empathy. Non-government organizations focus their work by maintaining preventive implementation through a progressive empowerment health education approach (Berenguera et al., 2011).

The participants in this study realizes that peers are a safe space to gain more information. Peer-led HIV programs and activities are also a key step to improve access to information that leads to HIV eradication desired outcomes. A peer HIV knowledge delivery program significantly enriches key populations' knowledge. A study in highly stigmatized male sex workers in Africa proved a significant improvement of the knowledge of prevention behaviors. Peers also improve HIV prevention initiative coverage among key populations (Geibel, King'ola, Temmerman, & Luchters, 2012). The essential knowledge provided by peers will influence key populations' decision and behavior. It also notably known that peer led programs increase significantly the degree of HIV testing among key populations. Previous study highlighted the changing numbers of key population engaging in HIV testing (Shangani et al., 2017). Peer education assigns key population with sufficient increase in knowledge of risk reduction through condom use, sexual transmission of HIV and transmission through sharps (Faust & Yaya, 2018). Peers also help in achieving treatment engagement and antiretroviral compliance (Genberg et al., 2016). Peers are considered as a platform that overcomes the stigma often felt by the key population (Hall et al., 2017). Peers also build

perpetuated social norms that justify HIV testing behavior of key populations' inner circle (Witzel, Weatherburn, Rodger, Bourne, & Burns, 2017). Social network influences HIV testing behavior in key population, and peers persuade and provide assistance in all testing process activities (Conserve, Alemu, Yamanis, Maman, & Kajula, 2018). In the Indonesia context, a study also found a narrative finding that people living with HIV determined their HIV healthcare access seeking behavior and healthcare function depended on social support (Setyoadi, 2013). Peer support also boosts the autonomy and self-determination of people living with HIV among Indonesian migrant workers (Nursalam, Yusuf, Widyawati, & Asmoro, 2015)

The study found the media as an accessible platform to obtain HIV-related information. Media certainly take a role in becoming an integral part of HIV-related information distribution in the community. Accessing media strongly influences knowledge and the face of HIV education. Media are positively associated with HIV knowledge and awareness about transmission and prevention (Jung, Arya, & Viswanath, 2013). Through technological improvement, the media can be accessed by anyone. Technology increases exposure among certain population and is considered as a significant predictor of HIV knowledge (Muhammad Hamid, Tamam, & Nizam Bin Osman, 2020). Media provides the key population with an interactive yet understandable interface in the urban settings and shape the variable as HIV knowledge predictors for urban population (Bekalu & Eggermont, 2014). Media becomes a platform to boost creative and innovative information delivery. Innovative digital improvisation in media delivery of HIV-related information has proved cost effectiveness in information distribution with large-scale coverage (Daher et al., 2017). Varies media options give the key populations freedom of choice to choose what is best for them. The individual approach of social media also marked a new trend of interventional strategies in HIV eradication activities (Tso, Tang, Li, Yan, & Tucker, 2016). The media has also proved its contribution by showing positive impacts in changing prevention behavior (Bertrand, O'Reilly, Denison, Anhang, & Sweat, 2006), HIV testing (Wang et al., 2019), and adherence monitoring (Bychkov & Young, 2018).

The healthcare providers also play a substantial role in providing information among participants. The rapid progress of healthcare services is also changing HIV programs and activities overlook. Healthcare providers are now accessible by the population to seek help and information. In a study, HIV risk populations admitted that healthcare personnel are moving forward to serve the HIV patients with equal treatments, more valued relationship, social support and confidentiality assurance (Stutterheim et al., 2014). Patient-centered care has also become a new focus trend in order to optimize HIV working progress. Providing access, uses and education of key population are the main variables in developing and deploying HIV-related interventions. Coordinated patient focus care is essential to build empowering situations among affected populations (Dixon & Kaneshiro, 2012). Healthcare services delivery by healthcare personnel faces many factors for improvement. Training, working experience, appropriate timetable plans are a necessity to be developed. A primary prevention practice is encouraged to push down new transmission disease in the population (Davis et al., 2016). In forming an appropriate attitude in delivering services among kin, healthcare providers have now become important to attract more people to engage healthcare services for obtaining HIV-related information (Abu Moghli, Al Habeesh, & Abu Shikha, 2017). The limitation of the study found some participants found it difficult to express the qualitative narration of their experience. It required the communication competency of in-depth semi-structured interviews of the interviewer.

CONCLUSION

This study showed a changing progress of HIV-related information delivery. The underpinning qualitative evaluation assures optimistic strategies need to be implemented and optimized years ahead in order to achieve 2030 goals. Maintaining the consequential pattern is crucial and developing better and strategic programs in HIV-related information delivery remains vital.

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REFERENCES

Abu Moghli, F., Al Habeesh, S., & Abu Shikha, L. (2017). Perception of HIV/AIDS Education at the Community Level in Jordan. Iranian Journal of Public Health, 46(3), 301–307. Retrieved from https://pubmed.ncbi.nlm.nih.gov/28435815

Bekalu, M. A., & Eggermont, S. (2014). Media use and HIV/AIDS knowledge: a knowledge gap perspective. Health Promotion International, 29(4), 739–750. https://doi.org/10.1093/heapro/dat030

Berenguera, A., Pujol-Ribera, E., Violan, C., Romaguera, A., Mansilla, R., Giménez, A., & Almeda, J. (2011). Experiences about HIV-AIDS preventive-control activities. Discourses from non-governmental organizations professionals and users. Gaceta Sanitaria, 25(3), 184–190. https://doi.org/10.1016/j.gaceta.2010.10.015

Bertrand, J. T., O'Reilly, K., Denison, J., Anhang, R., & Sweat, M. (2006). Systematic review of the effectiveness of mass communication programs to change HIV/AIDS-related behaviors in developing countries. Health Education Research, 21(4), 567–

597. https://doi.org/10.1093/her/cyl036

Bychkov, D., & Young, S. (2018). Social media as a tool to monitor adherence to HIV antiretroviral therapy. Journal of Clinical and Translational Research, 3(Suppl 3), 407–410. Retrieved from https://pubmed.ncbi.nlm.nih.gov/30873489

Chan, B. T., & Tsai, A. C. (2018). HIV knowledge trends during an era of rapid antiretroviral therapy scale-up: an analysis of 33 sub-Saharan African countries. Journal of the International AIDS Society, 21(7), e25169–e25169. https://doi.org/10.1002/jia2.25169

Conserve, D. F., Alemu, D., Yamanis, T., Maman, S., & Kajula, L. (2018). "He Told Me to Check My Health": A Qualitative Exploration of Social Network Influence on Men's HIV Testing Behavior and HIV Self-Testing Willingness in Tanzania. American Journal of Men's Health, 12(5), 1185–1196. https://doi.org/10.1177/1557988318777674

Daher, J., Vijh, R., Linthwaite, B., Dave, S., Kim, J., Dheda, K., … Pai, N. P. (2017). Do digital innovations for HIV and sexually transmitted infections work? Results from a systematic review (1996-2017). BMJ Open, 7(11), e017604–e017604. https://doi.org/10.1136/bmjopen-2017-017604

Davis, T., Teaster, P. B., Thornton, A., Watkins, J. F., Alexander, L., & Zanjani, F. (2016). Primary Care Providers' HIV Prevention Practices Among Older Adults. Journal of Applied Gerontology : The Official Journal of the Southern Gerontological Society, 35(12), 1325–1342. https://doi.org/10.1177/0733464815574093

Dixon, B. E., & Kaneshiro, K. (2012). Improving Access to HIV and AIDS Information Resources for Patients, Caregivers, and Clinicians: Results from the SHINE Project. Online Journal of Public Health Informatics, 4(1), ojphi.v4i1.3849. https://doi.org/10.5210/ojphi.v4i1.3849

Faust, L., & Yaya, S. (2018). The effect of HIV educational interventions on HIV-related knowledge, condom use, and HIV incidence in sub-Saharan Africa: a systematic review and meta-analysis. BMC Public Health, 18(1), 1254. https://doi.org/10.1186/s12889-018-6178-y

Geibel, S., King'ola, N., Temmerman, M., & Luchters, S. (2012). The impact of peer outreach on HIV knowledge and prevention behaviours of male sex workers in Mombasa, Kenya. Sexually Transmitted Infections, 88(5), 357–362. https://doi.org/10.1136/sextrans-2011-050224

Genberg, B. L., Shangani, S., Sabatino, K., Rachlis, B., Wachira, J., Braitstein, P., & Operario, D. (2016). Improving Engagement in the HIV Care Cascade: A Systematic Review of Interventions Involving People Living with HIV/AIDS as Peers. AIDS and Behavior, 20(10), 2452–2463. https://doi.org/10.1007/s10461-016-1307-z

Haakenstad, A., Moses, M. W., Tao, T., Tsakalos, G., Zlavog, B., Kates, J., … Dieleman, J. L. (2019). Potential for additional government spending on HIV/AIDS in 137 low-income and middle-income countries: an economic modelling study. The Lancet HIV, 6(6), e382–e395. https://doi.org/10.1016/S2352-3018(19)30038-4

Hakim, A. J., MacDonald, V., Hladik, W., Zhao, J., Burnett, J., Sabin, K., … Garcia Calleja, J. M. (2018). Gaps and opportunities: measuring the key population cascade through surveys and services to guide the HIV response. Journal of the International AIDS Society, 21 Suppl 5(Suppl Suppl 5), e25119–e25119. https://doi.org/10.1002/jia2.25119

Hall, B. J., Sou, K.-L., Beanland, R., Lacky, M., Tso, L. S., Ma, Q., … Tucker, J. D. (2017). Barriers and Facilitators to Interventions Improving Retention in HIV Care: A Qualitative Evidence Meta-Synthesis. AIDS and Behavior, 21(6), 1755–1767. https://doi.org/10.1007/s10461-016-1537-0

Hooshyar, S. H., Shahesmaeili, A., Faramani, R. S., Khajehkazemi, R., Nasirian, M., Sharifi, H., & Kamali, K. (2017). 85: KNOWLEDGE, ATTITUDE AND PRACTICE OF HIV/AIDS: A SYSTEMATIC REVIEW AMONG KEY POPULATIONS AT RISK FOR HIV INFECTION IN IRAN. BMJ Open, 7(Suppl 1), bmjopen-2016-015415.85. https://doi.org/10.1136/bmjopen-2016-015415.85

Iskarpatyoti, B. S., Lebov, J., Hart, L., Thomas, J., & Mandal, M. (2018). Evaluations of Structural Interventions for HIV Prevention: A Review of Approaches and Methods. AIDS and Behavior, 22(4), 1253–1264. https://doi.org/10.1007/s10461-017-1997-x

Januraga, P. P., Reekie, J., Mulyani, T., Lestari, B. W., Iskandar, S., Wisaksana, R., … Kaldor, J. M. (2018). The cascade of HIV care among key populations in Indonesia: a prospective cohort study. The Lancet HIV, 5(10), e560–e568. https://doi.org/10.1016/S2352-3018(18)30148-6

Jung, M., Arya, M., & Viswanath, K. (2013). Effect of media use on HIV/AIDS-related knowledge and condom use in sub-Saharan Africa: a cross-sectional study. PloS One, 8(7), e68359–e68359. https://doi.org/10.1371/journal.pone.0068359

Liu, Y., Osborn, C. Y., Qian, H.-Z., Yin, L., Xiao, D., Ruan, Y., … Amico, K. R. (2016). Barriers and Facilitators of Linkage to and Engagement in HIV Care Among HIV-Positive Men Who Have Sex with Men in China: A Qualitative Study. AIDS Patient Care and STDs, 30(2), 70–77. https://doi.org/10.1089/apc.2015.0296

Lo, C. Y.-P. (2018). Securitizing HIV/AIDS: a game changer in state-societal relations in China? Globalization and Health, 14(1), 50. https://doi.org/10.1186/s12992-018-0364-7

Maddali, M. V., Gupta, A., & Shah, M. (2016). Epidemiological impact of achieving UNAIDS 90-90-90 targets for HIV care in India: A modelling study. BMJ Open, 6(7), 1–6. https://doi.org/10.1136/bmjopen-2016-011914

Martínez Sanz, J., Pérez Elías, M. J., Muriel, A., Gómez Ayerbe, C., Vivancos Gallego, M. J., Sánchez Conde, M., … DRIVE 03, Opt. W. and F. S. G. (2019). Outcome of an HIV education program for primary care providers: Screening and late diagnosis rates. PloS One, 14(7), e0218380–e0218380. https://doi.org/10.1371/journal.pone.0218380

Muhammad Hamid, A., Tamam, E., & Nizam Bin Osman, M. (2020). Relationships between Media Exposure and Knowledge, Attitude, and Practice on HIV/AIDS: A Cross Sectional Survey of Adolescent Islamiyya Girls in Nigeria. Health Communication, 35(4), 419–429. https://doi.org/10.1080/10410236.2018.1564960

Nursalam, Yusuf, A., Widyawati, I. Y., & Asmoro, C. P. (2015). Peningkatan Kemandirian Perawatan Tenaga Kerja Indonesia (Tki) Yang Terinfeksi Hiv Melalui Pengembangan Model Pemberdayaan Keluarga Dan Peer Group Support. Jurnal Ners, 10(March 2016), 265–271.

Nyblade, L., Stockton, M. A., Giger, K., Bond, V., Ekstrand, M. L., Lean, R. M., … Wouters, E. (2019). Stigma in health facilities: why it matters and how we can change it. BMC Medicine, 17(1), 25. https://doi.org/10.1186/s12916-019-1256-2

Palumbo, R. (2015). Discussing the Effects of Poor Health Literacy on Patients Facing HIV: A Narrative Literature Review. International Journal of Health Policy and Management, 4(7), 417–430. https://doi.org/10.15171/ijhpm.2015.95

Perazzo, J., Reyes, D., & Webel, A. (2017). A Systematic Review of Health Literacy Interventions for People Living with HIV. AIDS and Behavior, 21(3), 812–821. https://doi.org/10.1007/s10461-016-1329-6

Phillips, G., Lindeman, P., Adames, C. N., Bettin, E., Bayston, C., Stonehouse, P., … Greene, G. J. (2019). Empowerment Evaluation: A Case Study of Citywide Implementation within an HIV Prevention Context. The American Journal of Evaluation, 40(3), 318–334. https://doi.org/10.1177/1098214018796991

Setyoadi. (2013). Pengalaman ODHA Mendapatkan Dukungan Sosial dalam Menjalani Kehidupan Sehari-hari di Malang Raya. Jurnal Ners, 8(2), 240–252.

Shangani, S., Escudero, D., Kirwa, K., Harrison, A., Marshall, B., & Operario, D. (2017). Effectiveness of peer-led interventions to increase HIV testing among men who have sex with men: a systematic review and meta-analysis. AIDS Care, 29(8), 1003–1013. https://doi.org/10.1080/09540121.2017.1282105

Stonbraker, S., Smaldone, A., Luft, H., Cushman, L. F., Lerebours Nadal, L., Halpern, M., & Larson, E. (2018). Associations between health literacy, HIV-related knowledge, and information behavior among persons living with HIV in the Dominican Republic. Public Health Nursing (Boston, Mass.), 35(3), 166–175. https://doi.org/10.1111/phn.12382

Stutterheim, S. E., Sicking, L., Brands, R., Baas, I., Roberts, H., van Brakel, W. H., … Bos, A. E. R. (2014). Patient and provider perspectives on HIV and HIV-related stigma in Dutch health care settings. AIDS Patient Care and STDs, 28(12), 652–665. https://doi.org/10.1089/apc.2014.0226

Tique, J. A., Howard, L. M., Gaveta, S., Sidat, M., Rothman, R. L., Vermund, S. H., & Ciampa, P. J. (2017). Measuring Health Literacy Among Adults with HIV Infection in Mozambique: Development and Validation of the HIV Literacy Test. AIDS and Behavior, 21(3), 822–832. https://doi.org/10.1007/s10461-016-1348-3

Tso, L. S., Tang, W., Li, H., Yan, H. Y., & Tucker, J. D. (2016). Social media interventions to prevent HIV: A review of interventions and methodological considerations. Current Opinion in Psychology, 9, 6–10. https://doi.org/10.1016/j.copsyc.2015.09.019

UN. (2019). Special edition: progress towards the Sustainable Development Goals. Retrieved from https://undocs.org/E/2019/68

UNAIDS. (2014). To help end the AIDS epidemic. United Nations, 40. Retrieved from http://www.unaids.org/sites/default/files/media_asset/90-90-90_en.pdf

UNAIDS. (2018a). Country factsheets China | 2018 HIV and AIDS Estimates| 2018 HIV People living with HIV Coverage of adults and children. Unaids, 1–6. Retrieved from https://aidsinfo.unaids.org/%0D

UNAIDS. (2018b). Country factsheets China | 2018 HIV and AIDS Estimates| 2018 HIV People living with HIV Coverage of adults and children. Unaids. Retrieved from https://aidsinfo.unaids.org/%0D

UNAIDS. (2019). Global HIV and AIDS statistics 2019 Fact sheet. Global HIV and AIDs Ststistics, World AIDS Day 2019 Fact Sheet, 1(June), 1–6.

UNAIDS. (2020). SUMMARY OF STRATEGY DEVELOPMENT PROCESS AND Phase I : Review of the current strategy (UNAIDS 2016-2021 On the Fast- Track to end AIDS), its implementation , and the results obtained Scope of the Review 2016-2021 Strategy Result Areas.

Wang, D., Mei, G., Xu, X., Zhao, R., Ma, Y., Chen, R., … Hu, Z. (2016). Chinese non-governmental organizations involved in HIV/AIDS prevention and control: Intra-organizational social capital as a new analytical perspective. Bioscience Trends, 10(5), 418–423. https://doi.org/10.5582/bst.2016.01134

Wang, L., Podson, D., Chen, Z., Lu, H., Wang, V., Shepard, C., … Mi, G. (2019). Using Social Media To Increase HIV Testing Among Men Who Have Sex with Men - Beijing, China, 2013-2017. MMWR. Morbidity and Mortality Weekly Report, 68(21), 478–482. https://doi.org/10.15585/mmwr.mm6821a3

Wawrzyniak, A. J., Ownby, R. L., McCoy, K., & Waldrop-Valverde, D. (2013). Health literacy: impact on the health of HIV-infected individuals. Current

HIV/AIDS Reports, 10(4), 295–304. https://doi.org/10.1007/s11904-013-0178-4

WHO. (2017). Policy Brief Hiv Prevention , Diagnosis , Treatment and Care for Key Populations. Geneva. Retrieved from https://www.who.int/publications-detail/consolidated-guidelines-on-hiv-prevention-diagnosis-treatment-and-care-for-key-populations

Witzel, T. C., Weatherburn, P., Rodger, A. J., Bourne, A. H., & Burns, F. M. (2017). Risk, reassurance and routine: a qualitative study of narrative understandings of the potential for HIV self-testing among men who have sex with men in England. BMC Public Health, 17(1), 491. https://doi.org/10.1186/s12889-017-4370-0

World Health Organization. (2019). Progress report on HIV, viral hepatitis and sexually transmitted infections 2019. Accountability for the global health sector strategies, 2016–2021. Geneva: WHO/CDS/HIV/19.7). Licence: CC BY-NC-SA 3.0 IGO.

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Original Research

Domestic Violence and Postpartum Depression

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ABSTRACT

Introduction: Domestic violence occurs at all levels of society. Evidence shows that sexual, physical and psychological violence are predisposing factors of postpartum depression. This study was aimed to determine the relationship between domestic violence and postpartum depression.

Methods: This research adopted quantitative method through observational with a cross-sectional study design by analyzing secondary data from SEHATI longitudinal surveillance. A total of 232 women was selected as sample using a purposive sampling method, with the sample criterion being mothers with children <2 years old located in Purworejo District, Central Java, consisting of 16 sub-districts and 494 villages. The data obtained were analyzed using the chi square statistical test and binomial regression test.

Results: The results of the quantitative data showed that physical violence against postpartum depression (PR = 1.7; 95% CI = 1.23-2.38), psychic violence against postpartum depression (PR = 1.9; 95% CI = 1.44-2.54), and sexual violence against postpartum depression (PR-2.0; 95% CI = 1.54-2.65). The result of the qualitative data showed that postpartum depression occurred due to domestic violence.

Conclusion: Physical, psychological and sexual violence in the household are significantly related to postpartum depression.

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INTRODUCTION

Domestic violence is the most common form of violence experienced by women in Indonesia (Oram et al., 2017). The definition of domestic violence as stated in Law Number 23 of 2004 Article 1 is every action against another person, which results in physical, sexual, psychological, and domestic misery or neglect of the household related to activities to carry out, coerce or take away the law in the contribution of the household (Fekadu et al., 2018; Jewkes et al., 2019). The causes of domestic violence can be classified into internal factors and external factors. Internal factors involve the personality of the perpetrators of violence which makes the perpetrators easily commit acts of violence when faced with situations that cause anger or frustration. Aggressive personalities are usually formed through interaction in the family or with the social environment in childhood. If violence presents in the life of a family, chances are that the children will experience the same thing after they get married (Adams & Bewley, 2017). This is because they consider that violence is a natural thing or they are considered a failure if they do not repeat the pattern of violence. Suppressed feelings of resentment and anger toward parents, will eventually manifest as acts of violence against their wives, husbands or children (Al-Dahasha & Kulatunga, 2018).

Domestic violence occurs almost all over the world. The number of reported incidents of violence against women in Indonesia has tended to increase over the past 11 years (Boivin & Leclerc, 2016; Liu et al., 2018). In 2019, there were 431,471 cases of violence against women, an increase of 693% from 2008 in which there were only 54,425 cases. Cases of domestic violence (KDRT) in Central Java in 2019 reached 2,525 cases. This is the second largest number after West Java, reaching 2,738 cases (Kaser-Boyd & Kennedy, 2018). This figure presents a phenomenon of events that need to be considered

and resolved (Adıbelli et al., 2019). Even though the amount of violence is quite large, in reality there are still women who experience violence and do not report (Boivin & Leclerc, 2016).

Battered mothers or conflicts with pregnant couples are among the causes of postpartum depression. Domestic abuse will have a negative impact, resulting in a mother's disturbed mental health (Adams & Bewley, 2017; Michau et al., 2015). Also, postnatal depression can interfere with a child's relationship with the mother if not treated properly and can cause problems in the family. For baby, postpartum depression results in emotional and behavioral disorders, such as eating and sleeping disorders, irritability to cry, and late communication, while untreated postpartum depression will increase the mother's risk of chronic depression and other major depressive episodes (Ayers et al., 2016; Safadi et al., 2016). In addition, the effects of postpartum depression can cause interactions between mothers and the baby so that, while loving the baby, if upset with the baby then the baby may be pinched, and there are also mothers who do not want to associate her husband's behavior with her baby (Fekadu et al., 2018). Based on the description above, this study was aimed to determine the relation of domestic violence to postpartum depression among women.

MATERIALS AND METHODS

This research adopted a quantitative method through observational with cross-sectional study design that analyzed secondary data from SEHATI longitudinal surveillance. Research was also conducted using qualitative methods through data collection and observing the processes that occur behind phenomena or events so as to obtain complex answers from respondents with in-depth interviews. The study population was all women at the time of the SEHATI survey and willing to be respondents, totaling 765 women. A total of 232 women was selected as sample using a purposive sampling method, with the sample criteria being mothers with children <2 years old located in Purworejo District, Central Java, consisting of 16 sub-districts and 494 villages.

Quantitative data were collected using the SEHATI questionnaire which was a modified questionnaire from the WHO Multi-Country Study on Women's Health and Agents of Women's Domestic Violence. The instrument used for screening for postpartum depression is Self-Reporting Questionnaire (SRQ) to show the possibility of depression. The results of the study were also strengthened by participant statements during the interviews as supporting data in accordance with the topic and objectives of the researcher. The data obtained were analyzed using the chi square statistical test and binomial regression test. This study received ethical approval from the Nursing Study Program, Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta.

RESULTS

Researched Variable Relationship Analysis

The frequency distribution of respondents' characteristics was based on age, education and pregnancy. The results of the research showed mothers' age 25-35 years old were 185 people (79.74 percent), mothers' age ≤ 19 years old and ≥ 36 years old were 47 people (20.26 percent). Respondents with educational background of graduating from high school and above were 57 people (24.57 percent), final education graduating from junior high school or below were 175 people (75.43 percent). Desired pregnancies were 178 people (76.72 percent) and unwanted pregnancies were 54 people (23.28 percent). Respondents who experienced physical violence from 232 respondents were 24 people (10.34 percent), those who did not experience physical violence were 208 people (89.66 percent). Those who experienced sexual violence were as many as 42 people (18.10 percent) and those who did not experience sexual violence were 190 people (81.90 percent). While 64 people experienced psychological violence (27.59 percent), 168 people did not experience psychological violence (72.41 percent) (Table 1).

The Relationship of the Variables Analysis

Physical violence was significantly related to postpartum depression (ρ = 0.009, PR = 1.7 95% CI = 1.23 - 2.38) and it can be interpreted that the postpartum depression prevalence in mothers who experience physical violence is 1.7 times greater compared to mothers who did not experience physical violence. Psychological violence is significantly related to postpartum depression (ρ = 0.000, PR = 1.9; 95% CI = 1.44 - 2.54) and it can be interpreted that postpartum depression prevalence in mothers who experience psychological violence is 1.9 times greater than in mothers who did not experience psychological violence. Sexual violence was significantly related to postpartum depression (ρ = 0.000, PR = 2.0; 95% CI = 1.54 - 2.65) and it can be interpreted that postpartum depression prevalence in mothers who experience sexual violence is 2.0 times greater than in mothers who did not experience sexual violence (Table 2).

The results of analysis of the relationship of respondents' characteristics of age and education to postpartum depression showed a statistically insignificant relationship ρ > 0.05 and 95% CI included the number 1. The relationship of pregnancy to postpartum depression showed a statistically significant relationship ρ < 0.05 and 95% CI, excluding number 1 (ρ = 0.043, RP = 1.4; 95% CI = 1.03 - 1.91) and it can be interpreted that postpartum depression prevalence in mothers with unwanted pregnancies is 1.4 times greater compared to mothers with desired pregnancies (Table 3).

The analysis results of the age respondent characteristics, education and pregnancy are significantly not related to physical violence,

Table 1. The Frequency Distribution of Respondents' Characteristics (n = 232)

The Characteristics of Research Subjects	Total	
	N	%
Age		
≤ 19 years and ≥ 36 years	47	20.26
20 – 35 years	185	79.74
Education		
Under Junior High School	175	75.43
Above High School	57	24.57
Pregnancy		
Unwanted Pregnancy	54	23.28
Desired Pregnancy	178	76.72
Physical Violence		
Yes	24	10.34
No	208	89.66
Psychological Violence		
Yes	64	27.59
No	168	72.41
Sexual Violence		
Yes	42	18.10
No	190	81.90
Depression		
Yes	97	41.81
No	135	58.19

Table 2. The Analysis Results of the Relationship of Domestic Violence with Postpartum Depression (n = 232)

Variable	Depression		X^2	ρ	PR	CI (95%)
	Yes n (%)	No n (%)				
Domestic Violence						
Physical Violence						
Yes	16 (66.67)	8 (33.33)	6.80	**0.009**	**1.7**	**1.23 – 2.38**
No	81 (38.94)	127 (61.06)				
Psychological Violence						
Yes	41 (64.06)	23 (35.94)	17.99	**0.000**	**1.9**	**1.44 – 2.54**
No	56 (33.33)	112 (66.67)				
Sexual Violence						
Yes	30 (71.43)	12 (28.57)	18.49	**0.000**	**2.0**	**1.54 – 2.65**
No	67 (35.26)	123 (64.74)				

Table 3. The Analysis Results of Respondents' Characteristic of Age, Education, and Pregnancy with Postpartum Depression (n = 232)

Variable	Depression		X^2	ρ	PR	CI (95%)
	Yes n (%)	No n (%)				
Age						
≤ 19 years and ≥ 36 years	22 (46.81)	25 (53.19)	0.61	0.437	1.1	0.81 – 1.64
20 – 35 years	75 (40.54)	110 (59.46)				
Education						
Under Junior High School	74 (42.49)	101 (57.71)	0.07	0.797	1.0	0.73 – 1.50
Above High School	23 (40.35)	34 (59.65)				
Pregnancy						
Unwanted Pregnancy	29 (53.70)	25 (46.30)	4.09	**0.043**	**1.4**	**1.03 – 1.91**
Desired Pregnancy	68 (38.20)	110 (61.80)				

statistically ρ > 0.05 (Table 4). The analysis results show the relationships between age education and pregnancy were not statistically significantly related to sexual violence ρ > 0.05 (Table 5).

Table 4. The Analysis Results of the Relationship of Age, Education, and Pregnancy with Domestic Violence (Physical Violence) (n = 232)

Variable	Physical Violence		X^2	ρ
	Yes n (%)	No n (%)		
Age				
≤ 19 years and ≥ 36 years	7 (14.89)	40 (85.11)	1.31	0.252
20 – 35 years	17 (9.19)	168 (90.81)		
Education				
Under Junior High School	20 (11.43)	155 (88.57)	0.90	0.342
Above High School	4 (7.02)	53 (92.98)		
Pregnancy				
Unwanted Pregnancy	8 (14.81)	46 (85.19)	1.52	0.218
Desired Pregnancy	16 (8.99)	162 (91.01)		

Table 5. The Analysis Results of the Relationship Between Age, Education, Pregnancy and Domestic Violence (Sexual Violence)

Variable	Sexual Violence		X^2	ρ
	Yes n (%)	No n (%)		
Age				
≤ 19 years and ≥ 36 years	8 (17.02)	39 (82.98)	0.05	0.829
20 – 35 years	34 (18.38)	151 (81.62)		
Education				
Under Junior High School	34 (19.43)	141 (80.57)	0.84	0.358
Above High School	8 (14.04)	49 (85.96)		
Pregnancy				
Unwanted Pregnancy	13 (24.07)	41 (75.93)	1.69	0.193
Desired Pregnancy	29 (16.29)	149 (83.71)		

Table 6. Binomial Regression Modeling of the Relationship of Physical, Sexual, Psychological and Variables of Age, Education and Pregnancy to Postpartum Depression

Variable	Model 1 PR (95% CI)	Model 2 PR (95% CI)	Model 3 PR (95% CI)
Physical Violence			
Yes	1.2	1.0	1.0
No	(1.03 – 1.59)	(1.03 – 1.03)	(0.75 – 1.53)
Psychological Violence			
Yes	1.5	1.4	1.4
No	(1.13 – 2.20)	(1.06 – 2.07)	(1.04 – 2.14)
Sexual Violence			
Yes	1.5	1.7	1.5
No	(1.17 - 2.16)	(1.27 – 2.31)	(1.12 – 2.19)
Pregnancy			
Unwanted Pregnancy		1.3	1.2
Desired Pregnancy		(1.08 – 1.66)	(0.90 – 1.63)
Age			
≤ 19 years and ≥ 36 years			1.1
20 – 35 years			(0.79 – 1.58)
Education			
Under Junior High School			0.9
Above High School			(0.64 – 1.32)
Deviance	340.27	340.49	349.19
R^2	0.03	0.03	0.03

Multivariable Analysis

Multivariable analysis was performed to see the relationship between the independent variables and the dependent variable simultaneously by including significant external variables in the bivariable analysis. The modeling was conducted to see the variables that influence the dependent variable by looking at the amount of the contribution given by the independent variables and external variables. The statistical test used was a binomial regression confidence interval analysis of 95%.

The first model was built to see the relationship of independent variables (physical, psychological and sexual violence) to the dependent variable (postpartum depression). The analysis shows that there is a significant relationship between physical, psychological and sexual violence with postpartum depression. The first model contributes three percent to postpartum depression. The second model was built to see the relationship of physical, psychological and sexual violence to postpartum depression, and to see the magnitude of the contribution of external variables (pregnancy). Model 2 shows a significant relationship between physical violence against postpartum depression by controlling pregnancy variables (PR = 1.0; 95% CI = 1.03 - 1.03), psychological violence against postpartum depression by controlling pregnancy variables (PR = 1.4; 95% CI = 1.06 - 2.07) and sexual violence against postpartum depression by controlling for pregnancy variables (PR = 1.7; 95% CI = 1.27 - 2.31). The second model contributes three percent to postpartum depression. The third model was built to see the relationship of physical, psychological and sexual violence to postpartum depression, and to see the contribution of external variables. Model 3 shows a meaningful and statistically significant relationship between psychological and sexual violence against postpartum depression by controlling for external variables. The third model contributes three percent to postpartum depression (Table 6).

DISCUSSION

Violence in women based on research results has a significant relationship with physical, psychological and sexual violence. Violence against women also has to do with the knowledge and age level of both perpetrators and victims. Violence that occurs can cause postpartum depression to be increased. This is in line with previous research which states that depression is influenced by the experiences of a mother in the past (Cooke et al., 2019; Paquet et al., 2017), especially in regard to unpleasant experiences. Mothers who often experience violence from spouses or other people will experience a higher feeling of fear: as a result these fears are a threat to them and, in the long run, cause depression (Adams & Bewley, 2017; McCabe et al., 2017). The incidence of depression will be increased especially in people who have less knowledge; it requires extensive information so that women can prepare for the birth process properly (Lahti et al., 2019).

This is also related to the age of pregnant women; the incidence of postpartum depression is most common in pregnant women who are too young or too old. Pregnant women of suitable age in pregnancy will be more adaptable and not cause easy sadness, because of the productive age (Henry & Powell, 2016; Will et al., 2016). A harmonious household situation must also be established by each family member, both husband and wife, so that the incidence of violence against women can be prevented and reduced (Michau et al., 2015). In line with research that examines the harmony of family life, the results of in-depth interviews with an elderly woman show that the woman's family can continue to harmonize because communication is always built and discussed whenever problems occur, so that problems can be resolved without causing disputes that lead to violence (Al-Dahasha & Kulatunga, 2018).

Violence against women in the form of physical, psychological and sexual violence still shows quite high numbers. Most are violence related to sexual crimes, many underage women have experienced it and it has caused deep trauma to victims (Boivin & Leclerc, 2016; Jung et al., 2019; Reed et al., 2016). The fear felt by the victim will make the incidence of depression and mental health disorders also increase. Counseling is very much needed to improve the psychological condition of the patient. In line with the research, the results show that the effects of sexual violence on children are very broad, encompassing physical, emotional and psychological conditions that can affect the development of children who are victims of sexual violence (Jewkes et al., 2019; Zhang et al., 2017). With various kinds of impacts that can arise, efforts are needed to anticipate the emergence of the impact of violence and treatment by the authorities. In addition to getting treatment from the authorities, professionals, in this case social workers, are also able to handle cases of sexual violence that occur to children (Semahegn & Mengistie, 2015).

Acts of violence are acts of crime; in general crime can arise due to the same conditions and processes, which results in social behavior. The social process can be seen from aspects of human life in society, namely, social mobility, competition and cultural conflict, political ideology, economy, quality of population, religion, income and employment. The social process that will influence a person to commit an act of violence can be analyzed as to the extent of its influence on a person with his violent actions. The limitations of the research obtained are the lack of exploration of information about the violence felt by someone, so it is necessary to do further and in-depth research.

CONCLUSION

Physical, psychological and sexual violence experienced by mothers from their husbands are

significantly related to postpartum depression. Age, education, and pregnancy factors are not confounding or interaction factors for postpartum depression in women with domestic violence.

REFERENCES

Adams, R., & Bewley, S. (2017). Domestic violence and abuse. In Biopsychosocial Factors in Obstetrics and Gynaecology (pp. 54–65). https://doi.org/10.1017/9781316341261.009

Adıbelli, D., Ünal, A. S., & Şen, T. (2019). Attitudes of Young Adult Men Toward Domestic Violence and Factors Affecting Their Attitudes in Turkey. Journal of Interpersonal Violence, 34(18), 3961–3977. https://doi.org/10.1177/0886260516673630

Al-Dahasha, H., & Kulatunga, U. (2018). Challenges Facing the Controlling Stage of the Disaster Response Management Resulting from War Operations and Terrorism in Iraq. Procedia Engineering, 212, 863–870. https://doi.org/10.1016/j.proeng.2018.01.111

Ayers, S., Bond, R., Bertullies, S., & Wijma, K. (2016). The aetiology of post-traumatic stress following childbirth: A meta-analysis and theoretical framework. In Psychological Medicine (Vol. 46, Issue 6, pp. 1121–1134). https://doi.org/10.1017/S0033291715002706

Boivin, R., & Leclerc, C. (2016). Domestic violence reported to the police: Correlates of victims' reporting behavior and support to legal proceedings. Violence and Victims, 31(3), 402–415. https://doi.org/10.1891/0886-6708.VV-D-14-00076

Cooke, J. E., Racine, N., Plamondon, A., Tough, S., & Madigan, S. (2019). Maternal adverse childhood experiences, attachment style, and mental health: Pathways of transmission to child behavior problems. Child Abuse and Neglect, 93, 27–37. https://doi.org/10.1016/j.chiabu.2019.04.011

Fekadu, E., Yigzaw, G., Gelaye, K. A., Ayele, T. A., Minwuye, T., Geneta, T., & Teshome, D. F. (2018). Prevalence of domestic violence and associated factors among pregnant women attending antenatal care service at University of Gondar Referral Hospital, Northwest Ethiopia. BMC Women's Health, 18(1). https://doi.org/10.1186/s12905-018-0632-y

Henry, N., & Powell, A. (2016). Sexual Violence in the Digital Age: The Scope and Limits of Criminal Law. Social and Legal Studies, 25(4), 397–418. https://doi.org/10.1177/0964663915624273

Jewkes, R., Corboz, J., & Gibbs, A. (2019). Violence against Afghan women by husbands, mothers-in-law and siblings-in-law/siblings: Risk markers and health consequences in an analysis of the baseline of a randomised controlled trial. PLoS ONE, 14(2). https://doi.org/10.1371/journal.pone.0211361

Jung, H., Herrenkohl, T. I., Skinner, M. L., Lee, J. O., Klika, J. B., & Rousson, A. N. (2019). Gender Differences in Intimate Partner Violence: A Predictive Analysis of IPV by Child Abuse and Domestic Violence Exposure During Early Childhood. Violence Against Women, 25(8), 903–924. https://doi.org/10.1177/1077801218796329

Kaser-Boyd, N., & Kennedy, R. (2018). Using R-PAS in the assessment of psychological variables in domestic violence. In Using the Rorschach Performance Assessment System® (R-PAS®). (pp. 282–308). http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2017-45013-014&site=ehost-live

Lahti, K., Vänskä, M., Qouta, S. R., Diab, S. Y., Perko, K., & Punamäki, R. L. (2019). Maternal experience of their infants' crying in the context of war trauma: Determinants and consequences. Infant Mental Health Journal, 40(2), 186–203. https://doi.org/10.1002/imhj.21768

Liu, M., Xue, J., Zhao, N., Wang, X., Jiao, D., & Zhu, T. (2018). Using Social Media to Explore the Consequences of Domestic Violence on Mental Health. Journal of Interpersonal Violence. https://doi.org/10.1177/0886260518757756

McCabe, B. E., Mitchell, E. M., Gonzalez-Guarda, R. M., Peragallo, N., & Mitrani, V. B. (2017). Transnational Motherhood: Health of Hispanic Mothers in the United States Who Are Separated From Children. Journal of Transcultural Nursing, 28(3), 243–250. https://doi.org/10.1177/1043659616644960

Michau, L., Horn, J., Bank, A., Dutt, M., & Zimmerman, C. (2015). Prevention of violence against women and girls: Lessons from practice. In The Lancet (Vol. 385, Issue 9978, pp. 1672–1684). https://doi.org/10.1016/S0140-6736(14)61797-9

Oram, S., Khalifeh, H., & Howard, L. M. (2017). Violence against women and mental health. In The Lancet Psychiatry (Vol. 4, Issue 2, pp. 159–170). https://doi.org/10.1016/S2215-0366(16)30261-9

Paquet, A., Plansont, B., Labrunie, A., Malauzat, D., & Girard, M. (2017). Past Pain Experience and Experimentally induced Pain Perception. Issues in Mental Health Nursing, 38(12), 1013–1021. https://doi.org/10.1080/01612840.2017.1354103

Pasal 1 Undang-Undang Nomor 23 Tahun 2004 tentang Penghapusan Kekerasan dalam Rumah Tangga (UU PDKRT). (n.d.).

Reed, L. A., Tolman, R. M., & Ward, L. M. (2016). Snooping and Sexting: Digital Media as a Context for Dating Aggression and Abuse Among College Students. Violence Against Women, 22(13), 1556–1576. https://doi.org/10.1177/1077801216630143

Safadi, R. R., Abushaikha, L. A., & Ahmad, M. M. (2016). Demographic, maternal, and infant health correlates of post-partum depression in Jordan. Nursing & Health Sciences, 18(3), 306–313.

https://doi.org/10.1111/nhs.12268
Semahegn, A., & Mengistie, B. (2015). Domestic violence against women and associated factors in Ethiopia; Systematic review. In Reproductive Health. https://doi.org/10.1186/s12978-015-0072-1
Will, J. L., Loper, A. B., & Jackson, S. L. (2016). Second-generation prisoners and the transmission of domestic violence. Journal of Interpersonal Violence, 31(1), 100–121. https://doi.org/10.1177/0886260514555127
Zhang, L., Li, X., Wang, B., Shen, Z., Zhou, Y., Xu, J., Tang, Z., & Stanton, B. (2017). Violence, stigma and mental health among female sex workers in China: A structural equation modeling. Women and Health, 57(6), 685–704. https://doi.org/10.1080/03630242.2016.1186781

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Original Research

Summary Guidance for Daily Practices on Glycemic Control and Foot Care Behavior

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ABSTRACT

Introduction: The Prevalence of Diabetes Foot Ulcers (DFU) in Indonesia is increasing every year. Summary Guidance for Daily Practice (SGFDP) is a media used to discuss and share knowledge to prevent foot ulcer in patients with Type 2 Diabetes Mellitus (T2DM). The aim was to know the influence of applying SGFDP on glycemic control (fasting blood glucose levels) and foot care behavior.

Methods: The study was quasi-experimental utilizing a pretest-post-test with a control group design. The sample obtained was 232 respondents through consecutive sampling. The variables were SGFDP, glycemic control, and foot care behavior. The intervention was conducted for three weeks meeting. The data collected using observation sheets and the Nottingham Assessment of Functional Footcare (NAFF) questionnaire. The results were analyzed using the Wilcoxon and Mann-Whitney tests.

Results: Most of respondents were elderly aged 41-50 years old. Respondents showed significant progressed of foot care behavior on before and after treatment. The results showed a significant influence from SGFDP on foot care behavior (p=0.001).

Conclusion: The application of SGFDP as an approach to prevent foot ulcers among adults T2DM was significantly affected. It was conducted by discussing and sharing knowledge and utilizing a foot ulcer prevention simulation with foot exercises. Sharing information and the attention given by the nurses in the form of regular meetings can increase patient knowledge and induce behavior changes among adult T2DM.

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INTRODUCTION

Diabetes mellitus (T2DM) is a metabolic disease characterized by an increase in blood sugar levels. This occurs due to abnormalities in insulin secretion, insulin action or both (Kusnanto, 2017). T2DM is one of the most chronic diseases experienced by people in the world. T2DM patients are susceptible to nerve and vascular damage which can result in a loss of the protective sensation in the legs, poor circulation, biomechanical changes in leg and skin trauma (Fan, 2012). If it is not treated well, it can occur because the development of ulcers is known in diabetic patients to be preceded by a history of trauma (neuropathy) or vasculopathy (Schaper et al., 2017). T2DM-related complications are a major cause of morbidity and mortality, and they have a serious impact on the quality of life of the patients (Hsieh et al., 2016). Foot ulceration and subsequent lower limb amputation are common and serious chronic complications for T2DM patients (Fan, 2012).

It is estimated that in 2035, the global prevalence of T2DM will increase to nearly 600 million (Shearman & Rawashdeh, 2016). In Indonesia, T2DM patients are known to have increased from 1.1% in 2007 to 2.1 percent in 2013. The province of East Java, with the prevalence of T2DM based on a doctor's diagnosis and symptoms, is 1.2% and 1.6% respectively (Badan Penelitian dan Pengembangan Kesehatan, 2013).The four main objectives of service providers include health promotion, disease prevention, patient care and meeting the patient's needs. The management of T2DM patients in the physical aspect with early education is about T2DM, the monitoring of routine blood sugar levels, diet, how to use the health facilities, physical exercise and

the importance of foot care (PERKENI, 2015). The role of the nurses is to prevent the risk of ulcers related to T2DM through education, demonstration and monitoring about foot care.

SGFDP is a summary of suggested guidelines for daily practice summarizing the essence of the prevention and management of foot problems in T2DM patients. SGFDP as part of a more complete guide on foot care consisting of the identification of risky feet, the inspection and routine checking of feet at risk, health education for patients regarding foot care, routine footwear care and identification and the handling of pre-ulcer signs (Schaper et al., 2017). SGFDP is provided more complete in health education and activity. Due to the important of SGFDP among T2DM to manage DM, thus we encouraged to determine the influence of applying SGFDP on glycemic control and foot care behavior.

MATERIALS AND METHODS

Research design, population, sample, and variables

The design was quasi-experimental with a pre-post-test control group design. The population in this research consisted of all outpatients with T2DM in three Primary Health Services (HPS). The researcher used two HPS for treatment group and one HPS for control group because the population is bigger, and the area coverage is wider. The samples obtained 232 respondents (116 in the treatment group and 116 in the control group) with consecutive sampling technique. This research was conducted at Palembang in South Sumatera from October 9 to December 20, 2018. The inclusion criteria in this research were 1) low risk T2DM patients, 2) T2DM history of more than 10 years, 3) can communicate verbally well, and they are able to read and write and 4) taking T2DM therapy in the form of oral subcutaneous therapy. The exclusion criteria were 1) patients with T2DM who experienced cognitive impairment and 2) T2DM patients with foot ulcers. The independent variable was the application of SGFDP and the dependent variables were glycemic control and foot care behavior.

Instruments

SGFDP used the modules as form of media to give to the respondents. The module of SGFDP consists of information about T2DM, diet, the behavior of people with T2DM, foot care behavior with exercise and psychosocial education to reduce stress in T2DM patients. The instrument of glycemic control was an observation sheet. Glycemic control used peripheral blood and measured by Easy Touch 3in1 Glucose, Uric Acid and Cholesterol. Foot care behavior was measured using the Nottingham Assessment of Functional Footcare (NAFF) questionnaire by Lincoln, et. al. (Lincoln et al., 2008), which was modified by Putri, at. al. (Putri et al., 2013) and translated into the Indonesian language. The number of questions totaled 27 using a Likert scale with a score of 0-3. We obtained a range of scores from 0 to 81; the higher the score, the better the T2DM foot care behavior. This questionnaire was tested for validity and reliability with a Cronbach's alpha value of 0.720.

Research procedure and analysis

This research was carried out in collaboration with the existing program activities in the primary health service in order to increase the knowledge of the T2DM patients through empowerment and health education. The research has passed the ethical review and obtained an Ethical Approval certificate No. 208/UN2.F12.D/HKP.02.04/2018 issued by the Health Research Ethics Committee of Faculty of Nursing Science, Universitas Indonesia. The research was conducted in the treatment group by providing SGFDP that formulated by researcher with select modules on three meetings over three weeks. The first week was to provide health education about T2DM and the screening of the respondents with the risk of foot ulcers. The second week was explained as the ideal diet and behavior of people with T2DM, and the third weeks was on teaching prevention of foot ulcers through a demonstration of foot exercises and monitoring. The control group was given information about T2DM through SGFDP modules. The data was analyzed using IBM SPSS Statistic 25 (SPSS, 2019). The statistical analysis used a Wilcoxon Signed Rank and Mann-Whitney U test. The confidence interval was 95% with alpha (α) = 0.05.

RESULTS

The characteristics of the respondents in (Table 1) shows that the majority of the respondents in both groups were in the age group of the elderly and that the majority were female. The last level of education for both groups was high school and the majority of respondents in both groups did not work. The majority of the income in the control and treatment groups was >2.6 million. The majority of the respondents in the control group had had T2DM for 14-15 years and the treatment group had had T2DM for 10-13 years.

The results of the analysis of fasting blood glucose in the control and treatment groups at the pre-test and post-test showed that all of the respondents had differences in the mean and std. deviation. The results of the data obtained using the Wilcoxon Signed Ranks test on fasting blood glucose in the pre-test and post-test of the control group showed no change in the results between the pre-test and post-test of the respondents. The test results showed $p>0.05$ which was 0.11, which means that there was no significant difference. The treatment group showed $p<0.05$ which was equal to 0.013, which means that the pre-test and post-test in the treatment group had significant differences. The results of the post-test carried out using the Mann-Whitney U test on fasting blood glucose data in the control and treatment groups was 0.836 which equals $p>0.05$. It can be

Table 1. Characteristics of The Respondents in The Control and Treatment Groups of Patients with T2DM (n=232)

Characteristic	Control Group		Treatment Group	
	n	%	n	%
Age				
Adult (30-40 year)	16	13.8	27	23.3
Elderly (41-50 year)	100	86.2	89	76.7
Sex				
Male	44	37.9	50	43.1
Female	72	62.1	66	56.9
Education				
Elementary School	19	16.4	23	19.8
Junior High School	26	22.4	39	33.6
Senior High School	54	46.6	46	39.7
University	17	14.7	8	6.9
Work				
Does not work	72	62.1	85	73.3
Private	26	22.4	23	19.8
Government employees	18	15.5	8	6.9
Average income				
<1.5 million	43	37.1	39	33.6
1.5-2.5 million	28	24.1	32	27.6
>2.6 million	45	38.8	45	38.8
Long suffer from T2DM				
10 – 13 years	49	42.2	83	71.6
14 – 15 years	67	57.8	33	28.4

Table 2. Distribution of Blood Glucose and Foot Care Behavior in The Control and Treatment Groups of Patients T2DM (n=232)

Variables	Control Group		Treatment Group	
	Pretest	Posttest	Pretest	Posttest
Blood Glucose				
Mean ± SD	121.47 ± 29.153	122.72 ± 29.396	117.29 ± 8.344	115.9 ± 14.62
p-value	0.11[a]		0.013[a]	
p-value	0.836[b]			
Foot Care Behavior				
Mean ± SD	38 ± 7.489	36.28 ± 9.878	43.02 ± 7.889	45.42 ± 8.254
p-value	0.274[a]		0.003[a]	
p-value	0.001[b]			

[a] Wilcoxon Signed Rank Test
[b] Mann-Whitney U Test

concluded that there were no significant differences in the results of the post-test data in the control and treatment groups (Table 2).

The results of the foot care behavior analysis in the control and treatment groups in the pre-test and post-test showed that all of the respondents had differences in the mean and std. deviation. The results of the data obtained using the Wilcoxon Signed Ranks test on foot care behavior on pre-test and post-test of the control group showed no change in the results between the pre-test and post-test of the respondents. The test results showed $p>0.05$, which was 0.274 which means that there was no significant difference. The treatment group showed $p<0.05$, which was equal to 0.003, which means that the pre-test and post-test in the treatment group had significant differences. The results of the post-test foot care behavior data using the Mann-Whitney U Test in the control and treatment groups were 0.001 which means $p<0.05$. It can be concluded that there were significant differences in the results of the post-test data between the control and treatment groups (Table 2).

DISCUSSION

The SGFDP approach explains the basic principles of the prevention of foot problems in T2DM patients (Schaper et al., 2017) and it seeks to prevent ulcers in patients at risk with T2DM by providing integrated and adequate foot care (S.A Bus, D.G. Armstrong, R.W. Van Deursen, J.E.A.Lewis, C.F Caravaggi, 2016). Prevention bases SGFDP include risky feet identification, risky inspection and routine foot checks, patient health education about foot care, appropriate footwear care and the identification of pre-ulcerative signs.

One risk factor of T2DM was age, especially for those older than 40 years. This is because at that age, there is an increase in glucose intolerance (Chai et al., 2018). In old age, bodily functions are physiologically decreasing because the aging process causes a decrease in insulin secretion or resistance. Therefore, the body's ability to control high blood glucose is not optimal. The aging process causes a decrease in insulin secretion or resistance, resulting in a macroangiopathy, which can affect the decrease in blood circulation, one of which is in the large or medium blood vessels in the legs.

Gender is one of the factors associated with the occurrence of T2DM, where women who have experienced menopause tend to be more insensitive to insulin. Diabetes in general, for men, comes faster than it does for women. Women can be protected from diabetes until they reach menopause because of the influence of the female hormone estrogen, which is a reproductive hormone that helps to regulate blood sugar levels in the body. The results of a study conducted by Martis, R et. al. (Martis et al., 2018) showed a higher prevalence of the incidence rate of T2DM in women than in men. Women are more at risk of developing diabetes because physically, women have a greater chance of increasing their body mass index. Post-menopausal monthly cycle (premenstrual syndrome) syndrome makes the distribution of body fat more easily accumulated due to the hormonal processes, so therefore women are more at risk of developing T2DM (Hsieh et al., 2016).

Education level has an important role in increasing the knowledge of T2DM. The majority of the residents did not know about T2DM. Knowledge can have an important role in the prevention of T2DM in the community. Education can influence a person, including a person's behavior and lifestyle, especially in reference to motivating people to participate in developments. In general, the higher the education level of someone, the easier it is for them to receive information (Wawan & Dewi, 2014).

The respondents who suffered from T2DM needed to do more physical activities. In T2DM, exercise plays a major role in regulating blood glucose levels. Muscle contractions have properties such as the production insulin and increasing the permeability of the membrane to glucose in the contracting muscle (Bakar et al., 2017). At the time of exercise, insulin resistance is reduced, whereas insulin sensitivity increases when inactive. This is not a permanent effect. Therefore, exercise must be carried out continuously. Physical activity can be in the form of diabetic foot exercises. Exercise is very beneficial for improving blood circulation, losing weight and improving insulin sensitivity as it will improve the glucose levels in the blood.

Hyperinsulinemia (10fEU/ml) can cause atherosclerosis, which has an impact on vasculopathy which makes the legs prone to T2DM ulcers (Rachmawati et al., 2015). In addition, it is often accompanied by an increase in triglyceride and plasma cholesterol levels which will result in poor blood circulation to the tissue, which appears in the decrease of the dorsalis pedis artery pulse (<60 x/m) and decreased ankle brachial index (<0.9), resulting in ulcers that usually start from the tip of the leg (Waspadji, 2006). All of the respondents in this study had suffered from T2DM for more than 10 years. Foot ulcers are especially common in T2DM patients who have suffered with the disease for 10 years or more. If their uncontrolled blood sugar levels are not seen to, then this will result in vasculopathy and neuropathy.

Physical activity is included in this research in the form of T2DM foot exercises. Physical activity increased the sensitivity of the insulin receptors in the active muscles (Albargawi et al., 2017). The main problem that occurs in T2DM is the occurrence of insulin resistance which causes glucose to not enter the cells. When a person engages in physical activity, there will be a muscle contraction which will eventually make it easier for glucose to enter the cell (Jankowska-Polaska et al., 2015). This means that when a person is engaged in physical activity, it will reduce the level of insulin resistance and this will eventually reduce their blood sugar levels. There are other factors that influence blood sugar levels. In addition to SGFDP implementation, there are several things that cause one's blood sugar to rise, namely a lack of exercise, an increased amount of food consumed, increased stress and emotional factors, weight gain and age, and the impact of treatment from drugs, such as steroids (Iljaž et al., 2017).

The driving factor was the factor obtained from the closest person to the patient and the social support given to the individual, such as their family, friends and teachers, and especially in this case, the health workers who can strengthen the behavior of SGFDP management. With the support provided by the closest people to them, it is expected to encourage behavior change in the patients (Nursalam, 2016). In terms of the prevention of injury in T2DM patients, foot care behavior is carried out in accordance with SGFDP, which consists of the identification of risky feet, the inspection and routine examination of risky feet, health education for patients about foot care, routine foot care and the identification of pre-ulcer signs in T2DM patients (Yamin et al., 2018).

The level of education of a person is very influential on any changes in attitude and behavior related to healthy living. Higher levels of education will make it easier for a person or community to absorb information and to implement it in their daily behavior patterns and lifestyle, especially in terms of health. Based on the information obtained by the researchers through questioning the respondents, the respondents said they always tried to maintain good foot care behavior in accordance with the principles of SGFDP so then further foot injuries can be prevented.

This is because of the intervention given by the researchers in the form of SGFDP through daily practice guidance that explain the basic principles of the prevention of foot problems in T2DM patients to prevent ulcers in patients at risk who have T2DM.

Foot problems in T2DM are one of the more serious complications. Foot problems are the main source of suffering and costs for the patients and they also place a considerable financial burden on health care and on society in general. Strategies include prevention, patient education and close foot monitoring (Schaper et al., 2017).

T2DM Patients with peripheral neuropathy also have a history of foot ulceration or lower limb amputation, foot deformity, poor foot hygiene and inappropriate or inadequate footwear. Furthermore, routine inspections and checks of at-risk feet should be conducted at least once a year to identify those at risk of foot ulceration. Patients who have any of the risk factors must be examined more frequently. These include a history of ulcers, previous amputations, end-stage kidney disease, social isolation, access to poor health care, walking without using a pedestal and a regular foot examination concerning vascular status, skin, footwear and an assessment of neuropathy (S.A Bus, D.G. Armstrong, R.W. Van Deursen, J.E.A.Lewis, C.F Caravaggi, 2016).

Health education for patients about foot care is presented in a structured, organized and repeated manner, both verbally and through media channels. This plays an important role in preventing foot problems. Patients with T2DM must learn how to recognize potential foot problems and they must be aware of the steps that they must take when problems arise. One of the sports recommended for people with T2DM is foot exercises (Lincoln et al., 2008). Gymnastic foot stretches aim to smooth the blood circulation that is disrupted. This is because leg exercises can strengthen the leg muscles. This is in accordance with Mariana, et.al. (Souza et al., 2017), who stated that T2DM foot exercises aim to improve blood circulation so then the nutrients can get to the tissues smoother. It can also strengthen the small muscles, calf muscles and thigh muscles, and overcome the limitations of joint motion that often experienced by T2DM patients. This is supported by theories involving endoneuria blood flow, increased nitric oxide synthesis and increased Na + / K + - ATPase activity with given training efforts (Brand & D, 2016).

Regular footwear, improper footwear and barefoot walking with insensitive feet are the main causes of foot ulceration. Patients with a loss of sensation should be taught about protection and the appropriate use of footwear so then the use of footwear at any time, both inside and outside the room, is paired with the identification of pre-ulcer signs in T2DM patients characterized by redness or pain (Schaper et al., 2017). The limitations in this study were that it was limited in terms of the time available and the intervention in the treatment group was for 3 weeks. Patient changes and any developments will be more visible if the intervention is carried out over a longer time period.

CONCLUSION

SGFDP explains the basic principles of preventing foot problems in patients in a manner that can be carried out in a session once a week and re-evaluated after 3 weeks by discussing, sharing knowledge and undergoing foot ulcer prevention simulation using foot exercise. Sharing information and the attention given by the nurses with regular meetings can increase patient knowledge and behavior changes in the T2DM patients to encourage them to take positive actions. This was proven to prevent foot injury in patients with T2 T2DM. SGFDP can be done regularly to train the T2DM type 2 patients to maintain a good lifestyle including good food, a balanced diet, exercise and regular activities. The next researchers could improve the treatment of SGFDP based on culture and by evaluating the qualitative results.

CONFLICT OF INTEREST

The authors have declared that they have no conflict of interest.

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REFERENCES

Albargawi, M., Snethen, J., Gannass, A. Al, & Kelber, S. (2017). Relationship between person ' s health beliefs and diabetes self-care management regimen. Journal of Vascular Nursing, 1–6. https://doi.org/10.1016/j.jvn.2017.07.002

Badan Penelitian dan Pengembangan Kesehatan. (2013). Riset Kesehatan Dasar (RISKESDAS) 2013. In Laporan Nasional 2013.

Bakar, A., Nursalam, Adriani, M., Kusnanto, Qomariah, S. N., Hidayati, L., Pratiwi, I., & Ni'mah, L. (2017). Spiritualitas perawat Meningkatkan Perilaku Caring. International Journal of Evaluasi Dan Penelitian Dalam Pendidikan (IJERE), 6(April), 23–30.

Brand, S. L., & D. (2016). Evaluation of the effect of nurse education on patient-reported foot checks and foot care behaviour of people with diabetes receiving haemodialysis. Diabetic Medicine, 33(2), 204–207. https://doi.org/10.1111/dme.12831

Chai, S., Yao, B., Xu, L., Wang, D., Sun, J., Yuan, N., Zhang, X., & Ji, L. (2018). The effect of diabetes self-management education on psychological status and blood glucose in newly diagnosed patients with diabetes type 2. Patient Education and Counseling, 101(8), 1427–1432. https://doi.org/10.1016/j.pec.2018.03.020

Fan, L. (2012). Examining the Feasibility , Acceptability and Effects of a Foot Self-Care Educational Intervention in Adult Patients with Diabetes at Low Risk for Foot Ulceration by. In

ProQuest. University of Toronto.

Hsieh, Y. L., Lee, F. H., Chen, C. L., Chang, M. F., & Han, P. H. (2016). Factors Influencing Intention to Receive Examination of Diabetes Complications. Asian Nursing Research, 10(4), 289–294. https://doi.org/10.1016/j.anr.2016.10.004

Iljaž, R., Brodnik, A., Zrimec, T., & Cukjati, I. (2017). E-Healthcare For Diabetes Mellitus Type 2 Patients – A Randomised Controlled Trial In Slovenia E-Zdravstvena Oskrba Bolnikov S Sladkorno Boleznijo Tipa Ii – Randomizirana Kontrolirana Raziskava V Sloveniji. 56(3), 150–157.

Jankowska-Polaska, B., Fal, A. M., Uchmanowicz, I., Sen, M., Polanski, J., & Kurpas, D. (2015). Influence of organized diabetic education on self-control and quality of life of patients with type 2 diabetes. International Journal of Diabetes in Developing Countries, 35, 79–87. https://doi.org/10.1007/s13410-014-0253-4

Kusnanto. (2017). Asuhan Keperawatan pada Klien dengan Diabetes Mellitus Pendekatan Holistic Care. AUP.

Lincoln, N. ., Radford, K. ., Game, F. ., & Jeffcoate, W. . (2008). Education for secondary prevention of foot ulcers in people with diabetes: A randomized controlled trial. Diabetologia, 51, 1954–1961.

Martis, R., Crowther, C. A., Shepherd, E., Alsweiler, J., Downie, M. R., & Brown, J. (2018). Treatments for women with gestational diabetes mellitus: an overview of Cochrane systematic reviews. Cochrane Database of Systematic Reviews. https://doi.org/10.1002/14651858.CD012327.pub2

Nursalam. (2016). Metodologi Penelitian Ilmu Keperawatan (4th ed.). Salemba Medika.

PERKENI. (2015). Pengolahan dan Pencegahan Diabetes Melitus Tipe 2 Di Indonesia 2015. https://doi.org/10.1017/CBO9781107415324.004

Putri, D. S. R., Yudianto, K., & Kurniawan, T. (2013). Perilaku Self-Management Pasien Diabetes Melitus (DM). 1(April 2013), 30–38. https://doi.org/10.24198/jkp.v1n1.4

Rachmawati, N., Safitri, N., K, D., Keperawatan, M. J., Kedokteran, F., & Diponegoro, U. (2015). Gambaran Kontrol dan Kadar Gula Darah pada Pasien Diabetes Melitus di Poliklinik Penyakit Dalam RSJ Prof. Dr. Soerojo Magelang. 01, 1–8.

S.A Bus, D.G. Armstrong, R.W. Van Deursen, J.E.A.Lewis, C.F Caravaggi, P. R. C. (2016). IWGFD guidance on footwear and offloading interventions to prevent and heal foot ulcers in patients with diabetes. Diabetes/Metabolism Research and Reviews, 32(30), 13–23. https://doi.org/10.1002/dmrr

Schaper, N. C., Van Netten, J. J., Apelqvist, J., Lipsky, B. A., & Bakker, K. (2017). Prevention and management of foot problems in diabetes: A Summary Guidance for Daily Practice 2015, based on the IWGDF guidance documents. Diabetes Research and Clinical Practice, 124, 84–92. https://doi.org/10.1016/j.diabres.2016.12.007

Shearman, C. P., & Rawashdeh, M. (2016). Foot complications in patients with diabetes. Surgery (Oxford), 34(4), 192–197. https://doi.org/10.1016/j.mpsur.2010.02.002

Souza, A. L. R., Guimarães, R. A., de Araújo Vilela, D., de Assis, R. M., de Almeida Cavalcante Oliveira, L. M., Souza, M. R., Nogueira, D. J., & Barbosa, M. A. (2017). Factors associated with the burden of family caregivers of patients with mental disorders: A cross-sectional study. BMC Psychiatry, 17(1), 1–10. https://doi.org/10.1186/s12888-017-1501-1

SPSS, I. (2019). IBM SPSS Statistics Vers 25. https://www.ibm.com/id-en/marketplace/spss-statistics/details

Waspadji, S. (2006). Komplikasi Kronik Diabetes: Mekanisme Terjadinya Diagnosis dan Strategi Pengelolaan. FK UI.

Wawan, A., & Dewi, M. (2014). Teori dan Pengukuran Pengetahuan. Nuha Medika.

Yamin, A., Windani, C., & Sari, M. (2018). Relationship of Family Support Towards Self-Management and Quality of Life of Patients with Type 2 Diabetes Mellitus. 6, 175–182.

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Original Research

The Differences of Inpatients' Satisfaction Level based on Socio-Demographic Characteristics

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ABSTRACT

Introduction: Assessing the quality of nursing care has become a global health issue. especially for caregivers and recipients of care in the inpatient department. Patient satisfaction is one of the indicators to measure quality of nursing care. This study aimed to identify the differences of patient satisfaction level in inpatient ward based on socio-demographic characteristics at Siloam Hospitals Bali.

Methods: This study was cross-sectional design with descriptive comparative and correlation methods. Patient satisfaction data were collected using the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ) that was provided after the patient was discharged. Purposive sampling technique was used to determine 107 samples. The analytical tests used in this study were the Spearman correlation test, Mann-Whitney test and Kruskal-Wallis test.

Results: The results of this study showed that there was a significant weak and negative correlation between the level of satisfaction and age of the patient ($p = 0.017$; $r = -0.231$; $\alpha < 0.05$). There were significant differences of patient satisfaction based on marital status ($p = 0.036$; $\alpha < 0.05$) and nationality status ($p = 0.001$; $\alpha < 0.05$), but there were no differences in patient satisfaction based on sex ($p = 0.276$; $\alpha < 0.05$) and education level ($p = 0.434$; $\alpha < 0.05$).

Conclusion: This study concluded that social demographic characteristics of patients can influence the satisfaction, but only on age, marital and nationality status. This showed that inpatients provide good satisfaction evaluations of nursing care. The optimal nursing care needs to be maintained and improved, either routine evaluation or sustainable program development.

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INTRODUCTION

Health has now become one of the main goals of the Sustainable Development Goals (SDGs) for 2030, which states that everyone has the right to achieve universal health coverage, including affordable medicines, accessibility, safe and effective quality of services and access to quality essential health services (World Health Organization, 2015). High health needs demand facilities and health service providers to perform better quality services and comply with established standards.

The health services quality was previously measured only by using professional standards and ignored the patient satisfaction value. Nevertheless, some findings revealed that patient satisfaction as an indicator to measure the health services quality. Patient satisfaction is defined by the happiness level by the patient during treatment or the patient's perception about the care received while treated in hospital (Worku & Loha, 2017). Patient satisfaction surveys can directly evaluate whether the extent of the care provided is able to meet the patient's health needs (Price et al., 2014).

The Ministry of Health Republic of Indonesia Act Number 129 Year 2008 established a minimum service standard for patient satisfaction of ≥ 90%. If health services are found with patient satisfaction levels lower than 90%, it could be assumed that the health services provided did not meet with the minimum standards or no quality. The patient satisfaction percentage in Indonesia obtained from

one central hospital was 77.1% (Novitasari et al., 2014), at regional hospitals was 83.3% (Mustika & Sari, 2019), and at private hospitals was 54.52% (Oini et al., 2017). These show that the picture of patient satisfaction level in Indonesia is still under the minimum standard established.

Variations in the patient satisfaction level with the service quality could be affected by several factors. Chen et al. (2019) revealed that there are non-modifiable factors that affect the patient satisfaction levels with variations such as age, sex, race and socioeconomic status. The patient satisfaction level also could be affected by several factors originating from the health services themselves, such as reliability, responsiveness, assurance, empathy and service quality (Mumu et al., 2015Sulistyo et al. (2019) stated that the funding sources, treatment duration and accreditation status could also affect patient satisfaction.

Patients who are satisfied with the treatment given will tend to adhere to the healthcare provider's treatment plan (Mohan & Kumar, 2011). Patient satisfaction also provides benefits to health services such as making patients loyal and increasing the visits percentages. Loyal patients will visit the same health service if they need back-to-back treatment (Nursalam, 2014), whereas for patients who are dissatisfied, services will lead to lower utilization of health services. Other forms of negative attitudes due to dissatisfaction could show as verbally influencing others to not to seek healthcare (Debono & Travaglia cited in Mukhtar et al., 2013).

Efforts made to improve the patient satisfaction with health services are achieved by improving facilities cleanliness, privacy settings and providing interpersonal services (Adhikary et al., 2018). Hospitals also need to pay attention about ongoing efforts to improve the collaboration and discipline between health professionals (de Oliveira et al., 2017). Nkwinda et al. (2019) also revealed that the hospital's high concern through the presence and nurses professional abilities could make patients satisfied with the services provided.

Siloam Hospitals Bali is part of the Siloam Group Hospital located in the Province of Bali. This hospital has become one of the private hospitals prepared to support medical tourism. Therefore, Siloam Hospitals Bali not only serves Indonesian patients, but also serves patients with foreign nationality. This can be seen from the results of preliminary studies obtained by the researcher on the number of tourists who have been hospitalized at Siloam Hospitals Bali from 2017 to 2019, respectively amounting to 1,269, 1,303 and 1,402 patients.

The change in number of inpatients at Siloam Hospitals Bali every year is a reflection of the patient satisfaction level with the care service received. These are certainly influenced by efforts to improve accreditation which demands a health service facility also to improve the treatment process provided (Alkhenizan & Shaw, 2011). However, the presence of patient-related factors, such as socio-demographic characteristics, could also affect the patients' satisfaction level during hospitalization. Therefore, patient satisfaction needs to be explored on an ongoing basis to identify variables that can influence patient responses during treatment and find out the changes needed to perform nursing care. This study aims to identify the differences of inpatients' satisfaction level based on socio-demographic characteristics at Siloam Hospitals Bali.

MATERIALS AND METHODS

This study is a non-experimental research with descriptive comparative and correlation methods and a cross sectional research design. The variables examined in the study were patient satisfaction as the dependent variable and socio-demographic characteristics (age, sex, education, marital status, and nationality status) as independent variables.

This study was conducted at inpatient installation of Siloam Hospitals Bali with the selected room number as research locations, namely four inpatient rooms consisting of Inpatient Department (IPD) -1, -2, -3, and Maternity Ward. The population in the study were all inpatients at Siloam Hospitals Bali. The inclusion criteria used in this study are: patients aged ≥12 years; inpatients at Siloam Hospitals Bali who declared allowed going home, willing to be the subject by signing informed consent, able to understand Indonesian or English. Meanwhile the exclusion criteria from this study are: patients in decreased consciousness condition and patients with cognitive impairment. This study also used dropout criteria, such as patients who did not fill the instruments completely and lost patients.

This study obtained a sample size of 107 patients selected using a non-probability sampling technique with purposive sampling. The research instrument used in this study was the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ). The PSNCQQ was developed by Laschinger et al. (2005) to measure patient satisfaction with the nursing services quality. The PSNCQQ instrument validity and reliability test was carried out on 445 patients in Canada and the results showed that the PSNCQQ has excellent psychometric with 0.97 Cronbach's alpha reliability and correlation items ranging from 0.61 to 0.89 (Laschinger et al., 2005). The PSNCQQ instrument was also tested in several developing countries, such as Serbia (n = 240) and Poland (n = 85); the results showed that the PSNCQQ instrument is valid and reliable (Ksykiewicz-Dorota et al., 2011; Milutinović et al., 2012).

The PSNCQQ instrument consists of 19 questions summarized in nine dimensions, namely individual assessment, nurses' attention, nurse abilities and skills, staff collaboration, comfort, nurse response, and information provided by nurses, return instructions and coordination after patients discharged. Data were collected through instruments given to patients after patients were declared as discharge allowed. The researcher also obtained

ethical clearance from the research ethics commission, prior to data collection.

The analysis test used in this study is the Spearman correlation test to determine the differences in satisfaction levels based on age, the Mann-Whitney test to determine the levels of satisfaction differences based on sex, marital status and nationality, as well as Kruskal-Wallis test to determine the differences in patient satisfaction levels based on education level.

RESULTS

Social demographic characteristics description and patient satisfaction are seen in Table 1. The patients' age characteristics in this study indicate that the mean age of patients is 41 years with the youngest age being 12 years and the oldest age being 74 years. Patient characteristics based on sex, education level, marital status and nationality showed that the majority of patients were male (51.4%), tertiary educated (46.7%), married (74.8%), and Indonesian (80.4%) The patient satisfaction description to nursing services shows that of the 107 patients undergoing hospitalization, it was found that the median patient satisfaction score was 75 with the lowest satisfaction score being 50 and the highest satisfaction score 95.

The analysis of inpatient satisfaction levels differences based on age, gender, education level, marital status and nationality are seen in Table 2. The differences analysis of inpatient satisfaction levels by age shows that there is a weak significant relationship with the negative correlation direction between patient satisfaction levels and age. The analysis shows that age can influence the level of patient satisfaction with weak strength (p value = 0.017; r = -0.231; α <0.05). The differences analysis of inpatient satisfaction levels by sex shows that the median value of patient satisfaction is found higher in men (76)

Table 1. The differences analysis of inpatient satisfaction levels by age, sex, education level, marital status and nationality

Variable	n (%)	Median (Min-Max)
Age (Years)	-	41 (12-74)
Gender		
Male	55 (51,4)	-
Female	52 (48,6)	-
Level of Education		
Primary Education	8 (7,5)	-
Secondary Education	49 (45,8)	-
Tertiary Education	50 (46,7)	-
Marital Status		
Married	80 (74,8)	-
Unmarried	27 (25,2)	-
Nationality		
Indonesian	86 (80,4)	-
Non-Indonesian	21 (19,6)	-
Patients satisfaction	-	75 (50-95)

Tabel 2. The Differences Analysis of Inpatient Satisfaction Levels by Age, Sex, Education Level, Marital Status and Nationality

Variable	Patient Satisfaction			
	n	Median (Min–Max)	*Mean Rank*	*p-value*
Age	107	-	-0,231#	0,017*
Gender				
Male	55	76 (56–95)	57,17	0,276**
Female	52	74,5 (50–95)	50,64	
Education Level				
Primary Education	8	79 (57–95)	65,38	0,434***
Secondary Education	49	76 (55–95)	55,31	
Tertiary Education	50	70,5 (50–95)	50.90	
Marital Status				
Married	80	73 (50–95)	50,36	0,036**
Unmarried	27	79 (55–95)	64,78	
Nationality				
Indonesian	86	72,5 (50–95)	48,87	0,001**
Non-Indonesian	21	85 (57–95)	75,02	

\# : coefficient correlation (r)
* : Spearman Correlation test result
** : Man-Whitney test result
*** : Kruskal-Wallis test result

than women (74.5). Statistical test results showed that there was no significant difference between satisfaction scores in male and female patients at Siloam Hospitals Bali (p value = 0.276; α <0.05).

The differences analysis of inpatient satisfaction level based on the level of education obtained the result that the higher median value of patient satisfaction was found in primary educated patients (79), compared to secondary educated (76) and tertiary educated (70.5). Statistical test results showed that there was no significant differences between satisfaction scores in primary, secondary and tertiary educated patients at Siloam Hospitals Bali (p value = 0.434; α <0.05). The differences analysis of inpatients' satisfaction level based on marital status obtained results that a higher median value was found in patients who were single (79) compared to those who were married (73). Statistical test results show that there were significant differences between the patient satisfaction scores with married and unmarried status at Siloam Hospitals Bali (p = 0.036; α <0.05). The differences analysis of inpatients' satisfaction level based on nationality shows higher median score found in non-Indonesian patients (85) compared to Indonesian patients (72.5). Statistical test results show that there is a significant difference between satisfaction scores in Indonesian patients and non-Indonesian patients in Siloam Hospitals Bali (p value = 0.001; α <0.05).

DISCUSSION

Inpatient satisfactions' overview

This study results indicated that all inpatients satisfaction scores were in range 50 to 95. Based on the median values obtained, these findings indicated that the patient satisfaction score is close to the maximum, which is 95. According to Thapa and Joshi (2019), the patient satisfaction level value with the care quality measured using the PSNCQQ instrument divided into two categories, which were good patient satisfaction (median ≥70) and poor patient satisfaction (median <70). Based on these categories, the median patient satisfaction score found in this study is categorized as good. This proves that inpatients at Siloam Hospitals Bali as a whole were satisfied with the nursing services received.

This study result is in line with the Thapa and Joshi (2019) study at one hospital in Chitwan City, Nepal, which found that the majority of patients had good satisfaction (50.5%). Research by Konduru et al. (2015) which categorizes the patient satisfaction level as good, moderate and bad also supports this study result, namely the majority of patients hospitalized at a public hospital in India have good satisfaction (66%) of nursing care services.

In the all items results of the statements given, the majority of inpatients gave a good evaluation value. This study shows that inpatients at Siloam Hospitals Bali received good quality nursing services. This is because the service quality will positively influence patient satisfaction, i.e. the better service quality, the higher patients satisfaction (Sulistyo et al., 2019).

Nursing services are professional services performed by nurses in accordance with service standards with the aim of delivering services that exceed patient expectations (Nursalam, 2014). Nursalam (2014) explains that the high and low level of patient expectations about the service quality can also be influenced by four interrelated factors, word-of-mouth communication, personal needs, past experiences and external communication (company's external communication). This shows that, in addition to factors in the nursing services quality, the gap between patient expectations and the care quality received can also affect patient satisfaction. The service quality could be defined to meet satisfying if the expected service is the same as perceived. Similarly, a service is said to not meet expectations or is not qualified if the expected service is greater than the perceived service (Nursalam, 2014).

This study also shows that hospital care management has been able to understand patient expectations, and that the majority of patients have good satisfaction. This is explained in the Grand Theory developed by Parasuraman (cited in Nursalam, 2014) related to gaps in service quality, as patient dissatisfaction can occur when the management of healthcare institutions has not been able to correctly identify and understand the health service users' expectations.

Differences in Patient Satisfaction Levels by Age

Based on this study's results, shows that there are differences in the inpatient satisfaction level based on age. Based on Rank Spearman test, there is a weak significant relationship with the negative correlation direction between the satisfaction level and patients' age. These results indicated that the younger the patient, the satisfaction will increase, while the older the patient, the satisfaction level will be lower.

This study results are supported by Batbaatar et al. (2017) who revealed that age as a demographic characteristic factor could influence the patient satisfaction level. Karaca and Durna (2019) also found that patients aged >65 years or patients with an older age tend to give less satisfied quality of care ratings compared to other age groups. Other research related to public satisfaction with the health system performance also found that the younger age group had higher satisfaction than the older age group (Footman et al., 2013).

Other studies related to patient satisfaction with the nursing care quality found different results. Chen et al. (2019) found that younger patients tended to show lower satisfaction compared to older patients. This is in line with research by Dzomeku et al. (2013) who found that patients with age <40 years tend to feel less satisfied with care services than patients aged> 40 years.

Older patients tend to be more satisfied with care services because elderly people generally

experienced chronic diseases. This condition causes them to be more receptive to their physical limitations than younger. This will encourage older patients to have lower demands and expectations. Therefore, older patients are generally more satisfied with care services than younger (Haj-Ali et al., 2014). In addition, the existence of cultural values factors, such as parents must be more respected and given special privileges, affects satisfaction because nurses will pay more attention to older than younger patients (Dzomeku et al., 2013).

Although the age factor can be said to be consistent, the relationship between age and satisfaction is still in a nonlinear pattern. This is proved by the findings, which stated that patient satisfaction increases until the age of 40 years, but can decrease sharply after 40 years (Amro et al., 2018). The variation in differences in the patient satisfaction level due to age is caused by several things, such as differences in cultural values, less positive patient responses, tolerance levels in each individual patient and age-related maturity levels (Karaca & Durna, 2019).

The differences results found in this study were caused by differences of patient needs that affect patient care services expectations. Karaca and Durna (2019) state that the low level of satisfaction in the patients group with older age is caused by the nurses' lack of attention in providing care to the elderly. This can lead to differences in patient needs, i.e. older patients have unique needs during treatment compared to younger. According to Chumbler et al. (2016), the differences in needs is caused by the inherent heterogeneity in the elderly patient group, the complex health status experiences, health wrong perceptions, and an illness history due to age.

These findings indicated that inpatient care providers need to pay special attention when providing care to older patients. One way is to improve and maintain communication between nurses and patients. Chumbler et al. (2016) revealed that nurses' communication was the second most influential factor on care satisfaction in a group of patients with older age (>70 years). In addition, Salehi et al. (2018) argued that older patients will feel more satisfied with healthcare if they receive more respect and attention. Therefore, inpatient care providers need to improve care services by ensuring good communication by nurses and maintaining the nursing staff's responsiveness to patient needs so that overall care can be patient-centered.

Differences in Patient Satisfaction Levels based on Gender

This study results obtained statistical data that showed that there were no differences in the patient satisfaction level by sex. This study is supported by the research of Karaca and Durna (2019) who found that there were no significant differences in satisfaction levels between male and female patients. Alsaqri (2016), in her research, also found the same, that there were no significant differences in satisfaction between men and women in providing nursing care evaluation.

Gender is a factor that still has strength and direction of the association that is not consistent with patient satisfaction (Batbaatar et al., 2017). This is proved by Chen et al. (2019) research which found that patients with female sex had higher levels of satisfaction compared to male patients. Other studies have found different results, namely male patients tend to feel more satisfied with treatment compared with female patients (Dzomeku et al., 2013).

Gender could affect patient satisfaction because they have different views of the hospital services provided. Women tend to pay more attention to the appearance in details, whereas men generally do not attach importance to it (Oroh et al., 2014). Those female patients will be more careful and critical of the quality aspects when evaluating the performance of service provider staff (Dzomeku et al., 2013). In addition, men also have different ways in managing relationships with women. Men tend to be more ignorant about what is stated by women, and they are considered more flexible (Gunarsa cited in Oroh et al., 2014).

This study found that gender did not affect inpatient satisfaction. Aspects that came from care service providers, such as hospital accreditation status, caused this. This is because good accreditation status will require hospitals to improve the services quality provided. Quality improvement could see from the hospitals efforts to improve cooperation and discipline among health workers in providing services (de Oliveira et al., 2017). In addition, accreditation is a determinant of patient satisfaction because of the complete hospital facilities and infrastructure support (Haj-Ali et al., 2014).

In addition to the factors originating from the care provider, the length of stay in the hospital can also affect patient satisfaction. According to Sulistyo et al. (2019), patient's length of stay can significantly affect patient satisfaction positively. This is because patients treated for a long time feel that they have received more attention (Salehi et al., 2018). Long-term treatment will also increase the health workers' attention and empathy to patients, then patients generally will more feel comfortable (Sulistyo et al., 2019).

Differences in Patient Satisfaction Levels based on Education Level

Based on this study, results showed that there were no differences in patient satisfaction levels based on primary, secondary and tertiary education levels. This is in line with Konduru et al. (2015) and Edmealem et al. (2019) who found that there were no significant differences in patient satisfaction with nursing care based on the level of patient education.

This study results differ from those of Amro et al. (2018) who found that patients with master's education had higher satisfaction compared to

bachelors, diploma and no education certificates. This is supported by Chen et al. (2019) who found that the majority of low satisfaction was experienced by less education patients and who did not have an education degree. This can be caused by the influence of the patient's education level on communication skills. Highly educated patients are better able to listen and integrate the opinion differences along with medical services (Amro et al., 2018). Bu-Alayyan (cited in Baltaci et al., 2013) also revealed that patients with high levels of education more easily communicate with medical personnel.

Other studies have also found different results, namely illiterate patients and only primary education patients tend to be satisfied with treatment (Dzomeku et al., 2013). Low-educated patients are more satisfied with the service because they do not have more information about the treatment they will receive, so they do not place high expectations on the service provider. Salehi et al. (2018) also supported that the majority of patients with low education did not have sufficient access to know good health service standards. Dzomeku et al. (2013) also argued that highly educated patients tend to be less satisfied because they are more able to access information about nurses' tasks. In addition, highly educated patients have obtained more information about the alternative treatments they will receive, so they will expect a higher care standard (Karaca & Durna, 2019).

In addition to accessing information easily, service quality can also affect patient satisfaction, i.e. the better service quality, the higher the patients' satisfaction. This is because good service quality will increase the speed of the service process provided, such as the easy registration administration process, nurses working systematically and effectively, and arrival on time, then patients will feel more satisfied and provide a positive assessment (Fuad et al., 2019).

Differences in Patient Satisfaction Levels based on Marital Status

Based on this research, the results show that there is a significant difference between the satisfaction of married and unmarried patients. This study analysis results indicated that unmarried patients have higher satisfaction than married patients. Marital status is categorized as either unmarried patient who is unmarried, divorced and dead divorced, or as a married patient, who is married and having married status.

This study finding are supported by Karaca and Durna (2019) who stated that marital status influences patient satisfaction. The study found that patients with divorced status had higher satisfaction with nursing services compared to patients who were married. This study results are also in line with the Akbas (2019) study at obstetrics and gynecology clinics in several hospitals types. The study found that single-status patients were more satisfied with nursing care services than married patients.

One study found different results, i.e. married patients were more satisfied with health services than single patients, divorced or patients living with partners (Ayranci & Atalay, 2019). Edmealem et al. (2019) also found that married patients were more satisfied with nursing care than single patients were. Although marital status is a contradictory factor in influencing patient satisfaction, other studies have found that there is no significant difference in satisfaction between married and single or unmarried patients (Konduru et al., 2015; Olomi et al., 2017).

This study found that unmarried patients tended to be more satisfied with nursing services. This tendency is attributed to the satisfaction description results based on the age characteristics found in this study, namely patients with younger ages tend to be more satisfied with care services. This is because the majority of unmarried individuals are younger, i.e. 0-17 years (99.94%) (Kementerian Pemberdayaan Perempuan and Perlindungan Anak RI, 2019). However, this relationship is used as a basis if the status category of unmarried patients is divorced or divorced. This is because the majority of divorced and dead divorced people is experienced by the age group of 45 years and over, which is 2.28% and 35.80%, respectively (Badan Pusat Statistik, 2018), while the percentage of divorced life and death divorce experienced by the age group of 10 to 17 years is only 0.04% (KPPPA RI, 2019).

If the patient satisfaction tendency categorized as unmarried occurs in patients with divorce status, this can be related to their older age. According to Chen et al. (2019), older patients will be more satisfied with the services received. This is because older patients are more receptive to their physical limitations, causing them to tend to have lower demands and expectations (Haj-Ali et al., 2014).

In addition to the age influence, aspects that come from healthcare providers, such as the environment, can also cause the satisfaction tendency found in patients who are not married. Quintana (cited in Batbaatar et al., 2017) , supports this in stating that patients with single or divorced status tend to be more satisfied with health services, especially in the comfort and hygiene aspects. This is because a satisfying physical environment, such as clean clothing availability, clean bedding and clean food will be considered as a good care evidence (Heidari et al., 2017).

These findings indicated that to be able to know differences in satisfaction levels based on marital status more clearly, it is necessary to identify the satisfaction scores proportion based on the category of single, married, divorced and dead divorced. It aims to analyze deeply the effect of marital status on patient satisfaction.

Differences in Patient Satisfaction Levels based on Nationality

Based on the study result, obtained statistical data show that there are significant differences between the satisfaction of Indonesian patients and non-Indonesian patients. This study analysis results indicated that the patients with foreign nationality have higher satisfaction than Indonesian nationality.

This study results are different from research conducted by Chaker and Al-Azzab (2011) related to the relationship between patient nationality and satisfaction scores at one of the specialized athlete hospitals in Qatar and which found that participants with Qatar nationality had higher satisfaction with hospital services compared to participants of European, Asia, North Africa, America and other countries. AlNemer et al. (2015) also conducted a similar study at a primary healthcare clinic in Riyadh, Saudi Arabia. This study results found no significant differences in patients' satisfaction between those who were Saudi Arabian and patients who were not.

The satisfaction tendency in non-Indonesian patients found in this study can be caused by differences in the patient's work status. Based on the survey, the number of foreigners who came to Bali in 2018 with a health tourism aim reached 6,070,473 (Bali Goverment Tourism Office, 2019). The data show that the majority of patients undergoing treatment at Siloam Hospitals Bali are foreigners. This refers to their activities while living in Bali, which is the majority of trips compared to work. Sulistyo et al. (2019) revealed that patients who did not work had higher satisfaction than patients who worked. This is because individuals who work generally have a habit of always focusing on the services, they should get to suit their needs. Therefore, individuals who work tend to be very dependent on health services, while individuals who do not work will tend to be more independent (Lupiyoadi cited in Sulistyo et al., 2019).

In addition to the influence of differences in patient work status, the strategic location of the hospital and the tourism area can also affect the satisfaction of non-Indonesian patients compared to Indonesian patients. Damghi et al. (2013) found that patients who lived within 10 kilometers of the hospital tended to be more satisfied than patients who lived more than 10 kilometers. Based on the observations, Siloam Hospitals Bali is located in the Kuta district, which causes this hospital to be the main health service access for tourists. Patients who are foreigners will be more satisfied because the location of a hospital that is easily accessible means patients get emergency care more quickly. This is also supported by Amro et al. (2018) who stated that patients who live in cities are more satisfied than patients who live in villages, because most private and government hospitals are located in cities.

CONCLUSION

Based on the research, it can be concluded that age can influence inpatient satisfaction with weak strength and negative correlation direction. Other socio-demographic characteristics factors that were found to influence inpatient satisfaction were marital status and nationality, while gender and education level were found to have no significant effect on patient satisfaction. Overall, inpatients provide good satisfaction evaluations of nursing care.

REFERENCES

Adhikary, G., Shajedur Rahman Shawon, M., Wazed Ali, M., Shamsuzzaman, M., Ahmed, S., Shackelford, K. A., Woldeab, A., Alam, N., Lim, S. S., Levine, A., Gakidou, E., & Jasim Uddin, M. (2018). Factors influencing patients' satisfaction at different levels of health facilities in Bangladesh: Results from patient exit interviews. *PLoS ONE*, *13*(5), 1–13. https://doi.org/10.1371/journal.pone.0196643

Akbas, M. (2019). Patient satisfaction on nursing care: The case of gynecology and obstetrics clinics. *Acta Bioethica*, *25*(1), 127–136. https://doi.org/10.4067/S1726-569X2019000100127

Alkhenizan, A., & Shaw, C. (2011). Impact of accreditation on the quality of healthcare services: A systematic review of the literature. *Annals of Saudi Medicine*, *31*(4), 407–416. https://doi.org/10.4103/0256-4947.83204

AlNemer, K. A., Al-Homood, I. A., AlNemer, A. A., Alshaikh, O. M., Alsaidan, M. A., & Alzahrani, A. T. (2015). A multicenter study of factors affecting patient's satisfaction visiting primary health care clinics in Riyadh, Saudi Arabia. *Family Medicine and Medical Science Research*, *4*(2), 1–4. https://doi.org/10.4172/2327-4972.1000169

Alsaqri, S. (2016). Patient satisfaction with quality of nursing care at Governmental Hospitals, Ha'il City, Saudi Arabia. *Journal of Biology, Agriculture and Healthcare*, *6*(10), 128–142. https://www.iiste.org/Journals/index.php/JBAH/article/view/30595

Amro, N., Kamel, A. M. A., Qtait, M., Yagi, H., Amro, B., Amro, R., & Amro, R. (2018). Factors affect patients satisfaction in Emergency Departments in Palestine. *Journal of Health, Medicine and Nursing*, *54*(1), 3–8. https://www.researchgate.net/publication/328031303

Ayranci, E., & Atalay, N. (2019). Demographic determinants of patient satisfaction: A study in a Turkish context. *International Journal of Academic Research in Business and Social Sciences*, *9*(6), 829–839. https://doi.org/10.6007/ijarbss/v9-i6/6041

Badan Pusat Statistik. (2018). Statistik Penduduk Lanjut Usia Tahun 2018. BPS Jakarta.

Bali Goverment Tourism Office. (2019). Direct Foreign Tourist Arrivals to Bali in 1971-2018.

https://disparda.baliprov.go.id/

Baltaci, D., Eroz, R., Ankarali, H., Erdem, O., Celer, A., & Korkut, Y. (2013). Association between patients' sociodemographic characteristics and their satisfaction with primary health care services in Turkey. *Kuwait Medical Journal*, *45*(4), 291–299. https://www.researchgate.net/publication/287273429

Batbaatar, E., Dorjdagva, J., Luvsannyam, A., Savino, M. M., & Amenta, P. (2017). Determinants of patient satisfaction: A systematic review. *Perspectives in Public Health*, *137*(2), 89–101. https://doi.org/10.1177/1757913916634136

Chaker, M., & Al-Azzab, N. (2011). Patient satisfaction in Qatar Orthopedic and Sports Medicine Hospital (ASPITAR). *International Journal of Business and Social Science*, *2*(7), 69–78. https://www.semanticscholar.org/

Chen, Q., Beal, E. W., Okunrintemi, V., Cerier, E., Paredes, A., Sun, S., Olsen, G., & Pawlik, T. M. (2019). The association between patient satisfaction and patient-reported health outcomes. *Journal of Patient Experience*, *6*(3), 201–209. https://doi.org/10.1177/2374373518795414

Chumbler, N. R., Otani, K., Desai, S. P., Herrmann, P. A., & Kurz, R. S. (2016). *Hospitalized Older Adults ' Patient Satisfaction : Inpatient Care Experiences*. *2016*. https://doi.org/10.1177/2158244016645639

Damghi, N., Belayachi, J., Armel, B., Zekraoui, A., Madani, N., Abidi, K., Benchekroun, A. B., Zeggwagh, A. A., & Abouqal, R. (2013). Patient satisfaction in a Moroccan Emergency Department. *International Archives of Medicine*, *6*(20), 1–8. https://doi.org/10.1186/1755-7682-6-20

de Oliveira, J. L. C., Gabriel, C. S., Fertonani, H. P., & Matsuda, L. M. (2017). Mudanças gerenciais resultantes da Acreditação hospitalar. *Revista Latino-Americana de Enfermagem*, *25*, 1–8. https://doi.org/10.1590/1518-8345.1394.2851

Dzomeku, V. M., Atinga, Ba-Etilayoo, Perekuu, T., & Mantey, R. E. (2013). In-patient satisfaction with nursing care: A case study at Kwame Nkrumah University of Science and Technology Hospital. *International Journal of Research In Medical and Health Sciences*, *2*(1), 1–6. http://www.ijsk.org/ijrmhs.html

Edmealem, A., Asfaw, Y., & Ademe, S. (2019). Patients' satisfaction and associated factors towards nursing care in Dessie Referral Hospital, Northeast Ethiopia. *Clinical Journal of Nursing Care and Practice*, *3*, 53–58. https://www.heighpubs.org/hjncp

Footman, K., Roberts, B., Mills, A., Richardson, E., & McKee, M. (2013). Public satisfaction as a measure of health system performance: A study of nine countries in the former Soviet Union. *Health Policy*, *112*(1–2), 62–69. https://doi.org/10.1016/j.healthpol.2013.03.004

Fuad, L., Tamtomo, D., & Sulaeman, E. S. (2019). Multilevel analysis on the effect of marketing mix strategy toward patient satisfaction in Magelang, Central Java. *Journal of Health Policy and Management*, *4*(1), 39–46. https://doi.org/10.26911/thejhpm.2019.04.01.05

Haj-Ali, W., Karroum, L. B., Natafgi, N., & Kassak, K. (2014). Exploring the relationship between accreditation and patient satisfaction-the case of selected Lebanese hospitals. *International Journal of Health Policy and Management*, *3*(6), 341–346. https://doi.org/10.15171/ijhpm.2014.116

Heidari, M., Pour, H., Norouzzadeh, R., Temel, E., & Şahin, B. (2017). Assessment patients' satisfaction related on quality of care: A Cross-sectional descriptive study. *Asian Journal of Medicine and Health*, *5*(4), 1–8. https://doi.org/10.9734/ajmah/2017/34513

Karaca, A., & Durna, Z. (2019). Patient satisfaction with the quality of nursing care. *Nursing Open*, *6*(2), 1–11. https://doi.org/10.1002/nop2.237

Kementerian Pemberdayaan Perempuan dan Perlindungan Anak RI. (2019). Profil Anak Indonesia Tahun 2018.

Konduru, A., Sujatha, T., & Judie, A. (2015). A study to assess the level of patient satisfaction on quality of nursing care among patients in SRM general hospital, kattankulathur. *International Journal of Pharmaceutical and Clinical Research*, *7*(6), 458–461. https://www.researchgate.net/publication/303089344

Ksykiewicz-Dorota, A., Sierpińska, L., Gorczyca, R., & Rogala-Pawelczyk, G. (2011). Polish version of patient satisfaction with Nursing Care Quality Questionnaire (PSNCQQ). *Progress in Health Sciences*, *1*(1), 51–56.

Laschinger, H. S., Hall, L. M., Pedersen, C., & Almost, J. (2005). A psychometric analysis of the patient satisfaction with nursing care quality questionnaire. *Journal of Nursing Care Quality*, *20*(3), 220–230. https://doi.org/10.1097/00001786-200507000-00006

Milutinović, D., Simin, D., Brkić, N., & Brkić, S. (2012). The patient satisfaction with nursing care quality: The psychometric study of the Serbian version of PSNCQ questionnaire. *Scandinavian Journal of Caring Sciences*, *26*(3), 598–606. https://doi.org/10.1111/j.1471-6712.2012.00969.x

Mohan, D. R., & Kumar, K. S. (2011). A study on the satisfaction of paitnets with reference to hospital services. *ZENITH International Journal of Business Economics & Management Research*, *1*(3), 15–25. http://zenithresearch.org.in/

Mukhtar, F., Anjum, A., Bajwa, M., Shahzad, S., Hamid, S., Masood, Z., & Mustafa, R. (2013). Patient Satisfaction. *Professional Med J*, *20*(6), 973–980. https://doi.org/10.3109/9780824706081.114

Mumu, L. J., Kandou, G. D., & Doda, D. V. (2015). Analisis faktor-faktor yang berhubungan dengan

kepuasan pasien di Poliklinik Penyakit Dalam RSUP Prof . Dr . R . D . Kandou Manado. *Jurnal Unsrat*, *5*(4). https://ejournal.unsrat.ac.id/index.php/jikmu/article/view/7460

Mustika, D., & Sari, K. (2019). Kepuasan pasien terhadap layanan rawat inap RSUD Jagakarsa tahun 2017/2018. *Jurnal ARSI*, *5*(3), 147–152. http://journal.fkm.ui.ac.id/arsi/article/view/2950

Nkwinda, B., Jacobs, W., & Downing, C. (2019). Patient satisfaction with caring at a district hospital in Malawi. *Global Journal of Health Science*, *11*(1), 15–27. https://doi.org/10.5539/gjhs.v11n1p15

Nursalam. (2014). Manajemen Keperawatan: Aplikasi Keperawatan Profesional (4th ed.). Selemba Medika.

Novitasari, A., Hidayat, M., & Kaporina, A. (2014). Kepuasan pasien rawat inap terhadap pelayanan keperawatan di RSUP Dr. Kariadi Semarang. *Jurnal Kedokteran Muhammadiyah*, *3*(1). https://jurnal.unimus.ac.id/index.php/kedokteran/article/view/2553

Oini, O., Komalasari, R., & Hasibuan, S. Y. (2017). Tingkat kepuasan pasien terhadap pelayanan keperawatan di unit rawat inap. *Nursing Current*, *5*(2), 50–60. https://ojs.uph.edu/index.php/NCJK/article/view/1707

Olomi, G., Mboya, I., & Manongi, R. (2017). Patients' level of satisfaction with the health care services received at outpatient departments in Kilimanjaro Region, Tanzania. *Journal of Patient Care*, *3*(1). https://doi.org/10.4172/2573-4598.1000124

Oroh, M. E., Rompas, S., & Pondaag, L. (2014). Faktor-faktor yang berhubungan dengan tingkat kepuasan pasien rawat inap terhadap pelayanan keperawatan di Ruang Interna Rsud Noongan. *Jurnal Keperawatan*, *2*(2). https://ejournal.unsrat.ac.id/index.php/jkp/article/view/5220

Peraturan Menteri Kesehatan Republik Indonesia Nomor 129 Tahun 2008 tentang Standar Pelayanan Minimal Rumah Sakit.

Price, R. A., Elliott, M. N., Zaslavsky, A. M., Hays, R. D., Lehrman, W. G., Rybowski, L., Edgman-Levitan, S., & Cleary, P. D. (2014). Examining the role of patient experience surveys in measuring health care quality. *Medical Care Research and Review*, *71*(5), 522–554. https://doi.org/10.1177/1077558714541480

Salehi, A., Jannati, A., Nosratnjad, S., & Heydari, L. (2018). Factors influencing the inpatients satisfaction in public hospitals: a systematic review. *Bali Medical Journal*, *7*(1), 17. https://doi.org/10.15562/bmj.v7i1.533

Sulistyo, S. A., Tamtomo, D., & Sulaeman, E. S. (2019). Accreditation Status and Other Factors Affecting Patient Satisfaction in Hospital. *Journal of Health Policy and Management*, *4*(3), 139–149. https://doi.org/10.26911/thejhpm.2019.04.03.01

Thapa, S., & Joshi, A. (2019). Patients' satisfaction with quality nursing care at teaching hospital, Chitwan. *Journal of Nursing and Health Science (IOSR-JNHS)*, *8*(3), 71–75. https://doi.org/10.9790/1959-0803077175

World Health Organization. (2015). Health in 2015 from MDGs to SDGs. https://www.who.int/gho/publications/mdgs-sdgs/en/

Worku, M., & Loha, E. (2017). Assessment of client satisfaction on emergency department services in Hawassa University Referral Hospital, Hawassa, Southern Ethiopia. *BMC Emergency Medicine*, *17*(1), 1–5. https://doi.org/10.1186/s12873-017-0132-7

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Original Research

What Do Our Nurses Know about Managing Patient with Permanent Pacemakers?

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ABSTRACT

Introduction: The number of patients with pacemaker implant is increasing in the health services sector in Malaysia, which requires nurses to have expertise in patient care with pacemaker implantation. Therefore, this study was conducted to analyse the level of knowledge among nurses regarding the management of patients with pacemaker implantation.

Methods: A cross-sectional study was conducted through purposive sampling among all nurses working at the critical care unit, intensive care unit, cardiac rehabilitation ward, investigation clinical laboratory, and non-invasive clinical laboratory in a public hospital in Kelantan. A questionnaire consisted of demographic data and nurses' knowledge was distributed. Data were analysed for descriptive analysis and using Pearson correlation test.

Results: Results from all respondents (n=70), show 48.6 % of the respondents had moderate knowledge about patient management with pacemaker implantation, 32.9 % had a low level of knowledge and only 13.6% had high knowledge regarding management of patient with pacemaker implantation. There is a significant difference between the level of knowledge and demographic data, that is between the level of education (p=0.027), age (p=0.011) and length of service (p=0.015). There is no significant relationship between knowledge and demographic data, such as gender (p=0.481), marital status (p=0.315), and post-basic (p=0.067).

Conclusion: Level of knowledge among nurses about the management of patient with pacemaker implantation is low to moderate. Additional education and exposure among nurses are needed to enhance the knowledge of nurses and improve the quality of care among patients with pacemaker implant.

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INTRODUCTION

According to the World Health Organization (WHO), in 2016, an estimated 17.9 million deaths worldwide are caused by cardiovascular disease (WHO, 2020). In Malaysia, in 2012, statistical data showed that 295.8% of deaths per 100,000 population in Malaysia were due to cardiovascular disease (WHO | Global Health Observatory (GHO) data, 2019). It is also estimated that around 450,000 deaths worldwide are caused by sudden cardiac death (Stecker et al., 2014). A poor electrical conduction system of the heart is seen as a critical issue and can result in death or cause complications such as congestive heart failure (Burri & Varma, 2013). Currently, the problem of heart rhythm can be treated with the use of a permanent pacemaker (PPM) which helps the heart when the rate of heart rhythm drops below 60 per minute. It acts as an artificial sino-atrial node and helps drain the heart's electrical system to raise the heart rate to 60 beats per minute (Boink, Christoffels, Robinson, & Tan, 2015). Nurses should play a role in caring for patients with PPM, through updating knowledge of pacemaker by attending continuous training and education to ensure comprehensive care (Humphreys, 2013). The knowledge of pacemaker management is very crucial, and a key factor to

ensure that the patients are fully informed and understand about the pacemaker. Nurses are reported to have a key role to liaise with the multidisciplinary team in providing information to patients and family members before surgery (Riley, 2015).

The pacemaker will be part of the patient's life expectancy and, therefore, the assessment of patient and caregiver knowledge is important to prevent early complications and dysfunction and that immediate treatment can be provided (Hatchett & Thompson, 2002). The pacemaker is also reported to induce musculoskeletal attention of the diaphragm, the pectoral or the intercostal muscles due to normal extracardiac stimulation (Rasmussen & Pareek, 2014). The implantation of pacemaker is also reported in reducing the incidence of falls, fall-related fractures and fall-related injuries among patients with sinus node dysfunction (Brenner et al., 2017). These ongoing updates and challenges among patients with pacemaker indicate the need for nurses to update their knowledge. Currently, there is no research on nurses' knowledge of pacemaker management in the local context. It is very crucial to identify the basic information related to the knowledge of nurses to provide ongoing awareness of the updated information of pacemaker. Therefore, this study was conducted to measure the level of knowledge among nurses regarding the management of patients with pacemaker implantation.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted. All nurses at cardiology related clinical area (coronary care, intensive care, cardiac rehab ward, invasive cardiac catheterization lab, and non-invasive cardiac lab) were purposively sampled to determine their levels of knowledge concerning pacemaker in one of the hospitals in Kelantan.

The questionnaires used in this study were adapted from HadiAtiyah (2016) through back and forward translation process by a group of three content experts to ensure the reliability and validity of the questionnaire. The questionnaire contained two parts: Part A, Sociodemographic Data; Part B, Knowledge. For demographic data, gender, age, marital status, education level, job placement, level of qualification and length of service in years were asked. The Part B questions (10 items) were related to nurses' knowledge, including the basic concepts of pacemaker, information on pacemaker and temporary pacemaker (TPM) as well as basic nursing knowledge. Responses to the statements were measured using a 5-point Likert scale: "strongly agree," "agree," "not sure," "disagree," and "strongly disagree." A pilot study was conducted to determine whether the instrument used in the measurement has high reliability and validity. The pilot study was conducted using 10 nurses and revealed a Cronbach's alpha value of 0.7. If the Cronbach's alpha value reaches 0.5 and above, it shows that the research questions are appropriate and applicable (Bowling, 2002). The higher the value of the reliability of a measuring item, the better the outcome is.

Data collection procedure: After obtaining ethical approval [OUM/5.7/2.1.1/469.3/303-17(006)], we executed the study for six months beginning February 2017. All nurses aged 20 years and above with a minimum of six months of clinical experience were purposively selected in the respective area and approached to participate in this study. We used Krejcie and Morgan sample size scheduling as a means of calculating sample size for this study (Krejcie & Morgan, 1970). According to the table, the sample size is based on the study population (70 nurses) and the sample size required is 59 people. The researcher distributed the questionnaire to 70 respondents and all respondents returned the completed questionnaire in response. Before the data collection, written consent was obtained from respondents. The respondents answered the questionnaire themselves, which took about seven to ten minutes. The respondents returned the completed questionnaires to the researcher, who checked them.

All data collected were kept confidential. The data were analysed using SPSS version 24, and the descriptive analysis results were presented in tables as frequency and percentage for the distribution of the data. Pearson's correlation coefficient was used to measure the relationship between knowledge and demographic characteristics. The results for associations between variables are also presented in tables, interpreted based on the significant p-value of $\alpha = 0.05$.

RESULTS

Table 1. Sociodemographic Data of Respondents (n = 70)

Variable	(*n*)	(%)
Gender		
Male	28	40.0
Female	42	60.0
Age		
20-34	38	54.3
35-54	32	45.7
Marital status		
Single	45	64.3
Married	25	35.7
Level of education		
Diploma	48	68.6
Bachelor's degree	17	24.3
Master's degree	5	7.1
Specialisation course		
With post-basic	32	45.7
Without post-basic	38	54.3
Length of service		
<5 years	4	5.7
5-10 years	29	41.4
11-20 years	27	36.6
>21 years	10	14.3

Table 2. Level of Knowledge Regarding Pacemaker (n=70)

Level	Frequency (*f*)	Percentage (%)
High	13	18.6
Moderate	34	48.6
Low	23	32.9

Table 3. Correlation between Knowledge Score and Sociodemographic Data

Knowledge score

	Coefficient, r	P-value	Mean	Standard deviation (SD)
Gender	- 0.86	0.481	1.60	0.49
Age	0.301*	0.011	2.45	0.5
Marital status	-0.122	0.315	1.36	0.48
Level of education	0.265*	0.027	1.38	0.62
Specialisation course	-0.220	0.067	1.54	0.50
Length of service	0.289*	0.015	2.61	0.80

**. Correlation is significant at the 0.05 level (2-tailed).*

Table 1 presents the detailed distribution of sociodemographic data among the respondents. This study included a total of 70 respondents, more than the required by the estimated minimum sample size of 59. There were 42 female respondents (60%), age range from 20-34 years was 38 (54.3%). For the level of education, 48 respondents obtained diploma (68.6%) while 32 (45.7%) respondents have specialisation certificate in cardiac nursing. For distribution of service, this was less than five years (n=4, 5.7%), five to ten years (n=29, 41.4%), 11-20 years (n=27, 36.6%) and more than 21 years (n=10, 14.3%).

Meanwhile, regarding knowledge of pacemaker, a questionnaire with a total of ten questions measured the level of knowledge on pacemaker. As presented in Table 2, almost half of the respondents have a moderate score (n=13, 48.6%), while a total of 13 respondents achieved a high score (18.6), and 23 respondents (32.9%) has a low score, particularly in information on the device.

Table 3 shows the results of sociodemographic data and level of knowledge in detail. Based on the data analysis using a Pearson correlation test, there was a significant association between age and knowledge: r = 0.301, p = 0.011; level of education and knowledge: r=0.265, p= 0.027; and length of service: r=0.289, p=0.015, while gender, marital status and specialisation course have no association with the level of knowledge regarding pacemaker among nurses.

DISCUSSION

This study indicated that the level of knowledge among nurses about the management of pacemaker is low to moderate. Most nurses in this study generally need to increase their knowledge about patient management with pacemakers, particularly information about the device, as compared to another study in Iraq (HadiAtiyah, 2016). Nurses need to educate the management of a patient with a cardiac problem, including a pacemaker. The development of professionalism is an activity that enhances the level of competence in terms of knowledge, skills and attitudes and the effectiveness of an individual's role in performing any given any task (Mohd Yusoff, Firdaus, Jamaludin, & Che Hasan, 2019).

Continuous education is needed to enhance the level of knowledge, skills and competencies in the treatment of patients. Similar to a study in Egypt, nurses' knowledge and practices related to patient management and cardiac implantation devices are still unsatisfactory, while nurses' knowledge levels are low (Ali, Youssef, Mohamed, & Hussein, 2014). The study has concluded that the source of knowledge of nurses regarding cardiac implantation device in relation to the topic is inconsistent with the nursing curriculum and has a profound impact on nurses' knowledge of cardiac implantation. Meanwhile, the lack of exposure and co-operation between each of the team disciplines led to the failure of nurses to have extensive knowledge of management of a patient with cardiac implantation devices. In addition, most nurses had low knowledge prior to the tests and satisfactory results after the tests on nurses as reported (Mahramus et al., 2013).

Moreover, it is important for nurses to have the knowledge and skills of cardiac implantation and specific care for patients with cardiac implantation (Ali et al., 2014). This finding is supported by Faisal in which he also recognised that nurses' knowledge and skills play a key role in providing counselling and care to patients requiring cardiac implantation so as to enable nurses to meet the complex needs (Ameen, 2017). Therefore, the need for nurses to receive ongoing training and education is very crucial.

Through bivariate analysis, this study also revealed that age and length of service play a significant role in influencing nurses' knowledge for the management of patients with pacemaker. Most nurses are from the age group of 20- 34 years and have less work experience. This is supported by another study where, through their research on the practice and perception of delirium in intensive care units in Egypt, studies show 75% of respondents are within the range of this study (Ali Elfeky & Shoeib Ali, 2013).

From the findings, we recommended some strategies to improve nurses' knowledge of management of patients with pacemaker. Firstly,

continuous nursing education regarding pacemaker among nurses with the collaboration of cardiologists to help further understandings of the nature of pacemaker and its relatedness. This could promote the development of a positive patient safety culture among healthcare professionals (Nurumal, Sabran, Hamid, & Hasan, 2020). Researchers involved in the study also should consider cultural context as, in Malaysia, many issues involving cultural surroundings were reported (Aris, Sulaiman, & Che Hasan, 2019; Mohd Sharif, Che Hasan, Che Jamaludin, & Zul Hasymi Firdaus, 2018). Secondly, interprofessional learning activities could also be done to engage with the understanding of the management of pacemaker in the different fields, namely cardiovascular technologist, pharmacy, nutrition and therapist. Such instances could lead the nurses to understand and be able to adjust the mode of pacemaker and the process of checking the specific pacemaker function, maintenance and follow-up of pacemakers and routine checks for patients. Thirdly, regular assessment for nurses regarding the care of patients with cardiovascular problems, particularly pacemaker, in all cardiology-related units. It could lead to provide good practice of working, improve skills, and update the knowledge from time to time. Limitation of this study could be the small number of sample size and focusing only on one hospital.

CONCLUSION

As a conclusion, the level of knowledge among nurses regarding pacemaker is moderate which requires a numbers of actions to increase the level. Level of education and length of service indicated the need for continuous education to promote understanding of the management of patients with pacemaker in general and provide full support to patients in need. Further bigger scale research in different settings also is suggested to generalise the findings.

REFERENCES

Ali Elfeky, H., & Shoeib Ali, F. (2013). Nurses' Practices and Perception of Delirium in the Intensive Care Units of a Selected University Hospitals in Egypt. *Journal of Education and Practice*, *4*(19), 61-70. Retrieved from www.iiste.org

Ali, N. S., Youssef, W., Mohamed, A., & Hussein, A. (2014). Nurses' knowledge and practice regarding implantable cardiac devices in Egypt. *British Journal of Cardiac Nursing*, *10*(1), 551-557. https://doi.org/10.12968/bjca.2015.10.1.34

Ameen, F. (2017). Knowledge of Cardiology Nurses, Regarding Care of Patients with Permanent Pacemakers and Implantable Cardioverter Defibrillators in Karachi Pakistan. *Prehospital and Disaster Medicine, 32*(1), S148-S149. https://doi.org/10.1017/s1049023x17004095

Aris, A., Sulaiman, S., & Che Hasan, M. K. (2019). The influence of music therapy on mental well-being among postoperative patients of total knee arthroplasty (TKA). *Enfermeria Clinica, 29*(2), 16-23. https://doi.org/10.1016/j.enfcli.2019.04.004

Boink, G. J. J., Christoffels, V. M., Robinson, R. B., & Tan, H. L. (2015). The past, present, and future of pacemaker therapies. *Trends in Cardiovascular Medicine, 25*(8), 661-673. https://doi.org/10.1016/j.tcm.2015.02.005

Bowling, A. (2002). *Research methods in health : investigating health and health services*. Open University Press.

Brenner, R., Ammann, P., Yoon, S.-I., Christen, S., Hellermann, J., Girod, G., … Kühne, M. (2017). Reduction of falls and fractures after permanent pacemaker implantation in elderly patients with sinus node dysfunction. *Europace : European Pacing, Arrhythmias, and Cardiac Electrophysiology : Journal of the Working Groups on Cardiac Pacing, Arrhythmias, and Cardiac Cellular Electrophysiology of the European Society of Cardiology*, *19*(7), 1220–1226. https://doi.org/10.1093/europace/euw156

Burri, H., & Varma, N. (2013). Remote device management in patients with cardiac complaints. *Cardiac Electrophysiology Clinics, 5*(3), 337-347. https://doi.org/10.1016/j.ccep.2013.05.005

HadiAtiyah, H. M. D. H. (2016). *Nurses, Knowledge Concerning an Implantation Pacemaker For Adult Patients with Cardiac Rhythm Disorder at Al-Nassirrhyia Heart Center*.

Hatchett, R. P., & Thompson, D. R. (2002). *Cardiac nursing : a comprehensive guide*.

Humphreys, M. (2013). *Nursing the Cardiac Patient*. Blackwell. https://doi.org/10.1002/9781118785331

Krejcie, R. V., & Morgan, D. W. (1970). *Determining Sample Size for Research Activities*. *Educational and Psychological Measurement, 30*(3), 607-610.

Mahramus, T. L., Penoyer, D. A., Sole, M. Lou, Wilson, D., Chamberlain, L., & Warrington, W. (2013). Clinical nurse specialist assessment of nurses' knowledge of heart failure. *Clinical Nurse Specialist, 27*(4),198-204. https://doi.org/10.1097/NUR.0b013e3182955735

Mohd Sharif, N. A., Che Hasan, M. K., Che Jamaludin, F. I., & Zul Hasymi Firdaus, M. K. (2018). The need for first aid education for adolescents. *Enfermería Clínica*, *28*(Supplement 1), 13–18. https://doi.org/10.1016/S1130-8621(18)30028-7

Mohd Yusoff, N. S., Firdaus, M. K. Z. H., Jamaludin, F. I. C., & Che Hasan, M. K. (2019). The need for educating healthcare professionals regarding good musculoskeletal health practice. *Enfermería Clínica, 29*(2),579-584. https://doi.org/10.1016/j.enfcli.2019.04.089

Nurumal, M. S., Sabran, N. M., Hamid, S. H. A., & Hasan, M. K. C. (2020). Nurses' Awareness on Patient Safety Culture in A Newly Established University Hospital. *Jurnal Keperawatan Indonesia*, *23*(2). https://doi.org/10.7454/jki.v0i0.1088

Rasmussen, I. K. B., & Pareek, M. (2014). A video demonstration of pacemaker-induced pectoral

muscle stimulation. *BMJ Case Reports*. https://doi.org/10.1136/bcr-2013-200697

Riley, J. (2015). The Key Roles For The Nurse In Acute Heart Failure Management. *Cardiac Failure Review, 1*(2), 123-127. https://doi.org/10.15420/cfr.2015.1.2.123

Stecker, E. C., Reinier, K., Marijon, E., Narayanan, K., Teodorescu, C., Uy-Evanado, A., … Chugh, S. S. (2014). Public health burden of sudden cardiac death in the United States. *Circulation: Arrhythmia and Electrophysiology, 7*(2), 212–2 . https://doi.org/10.1161/CIRCEP.113.001034

WHO. (2020). *Cardiovascular diseases (CVDs).* Retrieved from World Health Organisation website: https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)

WHO | Global Health Observatory (GHO) data. (2019). *WHO*.

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Original Research

Reducing Labor Pain Intensity within First Stage Active Phase through Hegu LI 4 Acupressure and Quranic Recital Method

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ABSTRACT

Introduction: Labor pain is one of the greatest pains experienced by a woman in their life. The purpose of this study was to examine the effectiveness of acupressure and Quranic recital on labor pain reduction.

Methods: The study design uses quasi-experiment with comparison between pretest and posttest on non-equivalent control group. Samples were as many as 30 laboring mothers in each group, totaling 60 samples who had been chosen through consecutive sampling technique. The labor pain was assessed through the NRS (Numeric Rating Scale) then analyzed univariately with mean and standard deviation, followed by independent T-sample statistical test such as bivariate analysis.

Results: The average pain reduction score in the Hegu LI 4 acupressure group was higher than the Quranic recital of Surah Ar-Rahman group. The acupressure group average pain reduction was 3.03 ± 0.718 while the Quranic recital group was 2.57 ± 1.006. The difference in the average score of independent T-test was significant with the P < 0.007 and 95% C.I. -0.919-(-0.015)

Conclusion: Hegu LI 4 acupressure and Quranic recital of Surah Ar-Rahman treatments were promising and may be utilized to reduce labor pain intensity within labor's first stage active phase. Hegu LI 4 acupressure group had a greater reduction in labor pain intensity than the Quranic recital of Surah Ar-Rahman group. This study suggests that Hegu LI 4 can be utilized to reduce labor pain as a non-pharmacological therapy.

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INTRODUCTION

Pain is a complicated and subjective experience, as it is within the scope of physiological and psychological interaction. Labor pain is the greatest pain experienced by most woman in their lifespan (Yazdkhasti & Pirak, 2016). Labor pain is the reaction between the uterine muscle contractions which normally happens in labor process. Contraction is intended to give a push to the fetus and opening the birth canal. The resulting effect is that the majority of mothers cannot tolerate this kind of pain, and are mainly affected by stress, fear, tension, and pain (Larasati & Alatas, 2016). The increasing of mothers' pain perceptiveness results in the mothers' panic level and then begging for a quick labor process, some of them request pain relief medicine, others even request unneeded surgical operations out of fear (Jones et al., 2012).

Heavy labor pain may induce weak uterine contraction, resulting in longer labor process and increasing the risk of hemorrhage (Lozada et al., 2018). In Indonesia, hemorrhages are one of the biggest contributing factors in the mothers' fatality rate aside from preeclampsia/eclampsia and infection (Kemenkes, 2018). Labor pain can be reduced with pharmacological and non-pharmacological methods (Asadi et al., 2015), and wider cervical opening will commonly heighten labor pain (Hawkins, 2010). Pharmacological methods have better effects in treating labor pain, but this treatment can only be done with authorized medical doctors while having more expensive costs (Lozada et al., 2018). The non-pharmacological methods have minimal side effects with cheaper cost or even no

additional costs while having the same effectiveness in reducing labor pain. Even so, non-pharmacological methods need to be standardized (Gayesi & Brüggemann, 2010); non-pharmacological approaches, especially acupressure, still need to be researched and expanded further before becoming a standard in addressing labor pain (Robinson et al., 2011).

Mothers' pain experienced in the labor process is unique and natural. The administration and surveillance of labor pain, especially in the first stage active phase is crucial, as it is the determining point of whether the labor process is considered normal or must be ended with interventions because of complications from severe pain (Zhang et al, 2010). The approach of labor pain management increasingly depends on pharmacological methods. Because of side effects on mothers and fetuses, the use of non-pharmacological methods is also increasingly popular (Schlaeger et al., 2017) According to a systematic review by Rahimi et al. (2018), non-pharmacological methods are effective, but the processes are not well defined and standardized.

Acupressure is a non-pharmacological method to relieve pain and included in the Traditional Chinese Medicine (TCM); it is considered as a non-invasive method and based on acupuncture principles (Shahali & Kashanian, 2010). TCM considers the human body as a united channel to transmit energy (meridian). Each of specific points in human body pass through a meridian line (Zhang et al., 2010). Recent studies from Schlaeger et al. (2017) and Rahimi et al. (2018) showed that acupuncture could reduce pain and anxiety in the labor process. There are many acupressure points in human body, and every point has different effect in the body. Acupressure could also increase the production of endorphin hormones which function as a painkiller. To reduce pain, there are several acupressure points that could be pressed. One of them is the LI 4 (Hegu) point (Gönenç & Terzioğlu, 2020).

Non-pharmacological therapy to relieve pain may also be administered through distraction techniques, one of which is listening to Quranic verses. This therapy stimulates delta brainwave which makes the listener feel comfort and tranquil (Wirakhmi et al., 2018). Quran recital therapy with correct rhythm and pronunciations will result in the decrease of anxiety level, Ghofar (2012) confirmed that 65% of therapy subjects felt a sense of tranquility and anxiety reduction, while Elzaky (2011) concluded that listening to Quranic recital of Surah Ar-Rahman transmits a soundwave which affects the movements of human cells; it is also activates pain pressure lanes and is succeeded by electrical stimulation of the substantia grisea cerebri in waking the analgesic neurotransmitter (endorphin, encephalin, dinorphin) which acts as pain suppressor. Surah Ar-Rahman is a chapter in the Quran believed to have medicinal properties if being listened to repeatedly with the correct recital (Wahida et al., 2015). Surah Ar-Rahman also has repetitive verses which give

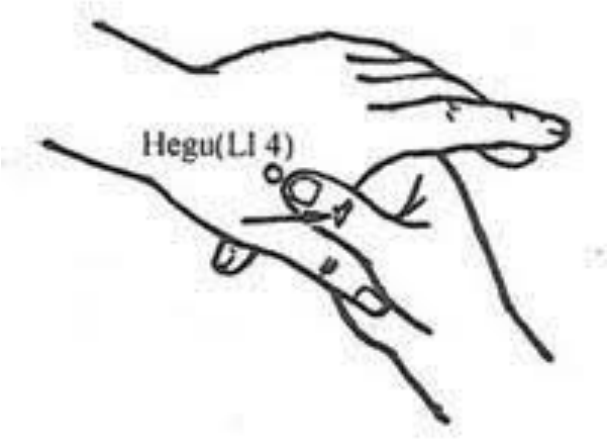

Figure 1. Hegu LI 4 Pressure Point

accentuated rhythm to the listeners. As repetitive verses can be appealing and behave as hypnosis, so patients brainwaves will attune into the rhythm and increase the production of serotonin and endorphin, which gives relaxing, serene, and delighting effects (Wahida et al., 2015).

Music may also be used to minimize labor pain, as music may give energy and subliminal commands through its rhythm; music with an appropriate tempo may help mothers to regulate their breathing in labor process. Classical music is commonly used to distract pain perception. Faradisi, (2012) proved that music could reduce anxiety, stress level, bad emotions and physical pain, and relax the muscles. Our study aims to assess the effectivity of Hegu LI 4 acupressure point with Quranic recital intervention of Surah Ar-Rahman in reducing labor pain intensity within the first stage active phase

MATERIALS AND METHODS

The study uses quasi experimental design with non-equivalent control group design, which means the subjects grouping was not random. In this design, we compare Hegu LI 4 acupressure group with Surah Ar-Rahman Quranic recital group. 30 laboring mothers were treated with Hegu LI 4 acupressure within 10 minutes in the Hegu spot in the right/left hand, while the other 30 laboring mothers were treated with Quranic recital of Surah Ar-Rahman with MP3 device within 20 minutes. These two groups were compared with pretest, intervention, and posttest questionnaire.

Study population was the entirety of mothers within the first stage active phase labor process who fulfilled all inclusion criteria. The criteria were normal labor with gestational period ≥ 37 weeks old, single gestation, head presentation, no labor induction, within first stage active phase (4-6 cm cervical opening), adequate his (uterine contractions > 3 times in 10 minutes with contraction time > 40 seconds), labor process supported with the husband or family, and not using pharmacological administration in reducing pain. Samples used are 30

Table 1. Respondents' Demographics and Characteristics

Variables	Hegu LI 4 Acupressure Mean ± SD	Quranic Recital of Surah Ar-Rahman Mean ± SD	p
Age	26.73 ± 4.386	25..63 ± 5.524	0.156
Parity	1.60 ± 0.675	1.53 ± 0.123	0.804
Anxiety	11.50 ± 5.557	11.93 ± 4.697	0.251
Pain score before intervention	6.30 ± 0.988	6.33 ± 0.988	0.219

Table 2. Intervention Effect to Labor Pain Level

Interventions	Pain Level		Pretest - Posttest	mean	95% C.I.	p
	Pretest Mean ± SD	Posttest Mean ± SD				
Quranic Recital of Surah Ar-Rahman	6.33 ± 1.184	3.77 ± 1.073	2.57 ± 1.006	-0.46	-0.919-(-0.015)	0.007
Hegu LI 4 Acupressure	6.30 ± 0.988	3.27 ± 0.785	3.03 ± 0.718			

laboring mothers in each group, amounting to 60 samples.

Samples were gathered using non-probability sampling with consecutive sampling technique, meaning that samples were chosen through determining subjects who fulfilled the study criteria and treated within a set elapsed time until the number of subjects was enough.

Data were collected with direct observations on mothers who were within labors' first stage active phase; mothers were given pretests (preliminary observations) before proceeding with interventions of Hegu LI 4 acupressure in the first group and Quranic recital of Surah Ar-Rahman in the second group, followed by posttest (final observation). The intervention of Hegu LI 4 acupressure was done by the researchers, who had a level 4 acupressurist certificate of competency. Enumerators gave information to the researchers if there were laboring mothers who met the criteria and were willing to become study respondents. The intervention of the Quranic recital of Surah Ar-Rahman was done by enumerators with the recorded recital provided by the researchers. The administrations of Hegu LI 4 acupressure and Quranic recital were done after the mothers entered the delivery room, had cervical opening checked, and signed the informed consent. Each administration was carried out for 20 minutes. Both groups were given a Numeric Rating Scale (NRS) pain scale to assess the difference between the value of pretest and posttest. Data are presented within average standard deviation table and followed by normality test. Data are further analyzed with independent T-Test for bivariate regression using significance rate $\alpha = 0.05$.

RESULTS

Univariate analysis is used to analyze respondent characteristic distributions. Using 60 mothers as respondents divided in two groups, distribution characteristics can be seen in Table 1.

From Table 1 we can stipulate that the comparability of subjects are homogenous and comparable. All variables in Table 1 do not have a significant difference ($P > 0.05$), implying that data are equitably distributed before the study progressed further.

According to Table 2 the average score of labor pain reduction in the Quranic recital group is 2.57 ± 1.006, whereas the acupressure Hegu LI 4 group score is 3.03 ± 0.718. From the independent sample T-test, the resulting score is 0.919-(-0.015) with $P < 0.007$ under confidence interval of 95%. To summarize, the decrease of labor pain score is greater in the Hegu LI 4 acupressure group, implying the effectiveness of acupressure statistically and clinically.

Figure 2 summarizes the comparison of labor pain intensity between intervention groups. Overall, two groups have a decreasing score in labor pain intensity from the pretest to posttest, but the Hegu LI 4 acupressure group has a greater decrease in labor pain than the Quranic recital of Surah Ar-Rahman group

DISCUSSION

Acupressure intervention in Hegu LI 4 could increase the level of endorphin hormones. Endorphin has an effect in pain relief (Hamidzadeh et al., 2012). Gate control theory explains that pain is transmitted by nerve fibers to the spinal cord before being transmitted to the brain. Synapses in the dorsal horn act as a closed gate to maintain impulses before reaching the brain. According to gate control theory, nerve fibers which have small diameters and carry pain stimuli from the nerves to the same gate could hinder the transmission of pain impulses through closing the gate (Kashanian & Shahali, 2010).

Gate control theory also explains that, while labor is going on, pain impulses are transmitted from the uterus all along the large nerve fibers to the upper level of gelatinous substance in the spinal column and transmission cells project a pain message to the brain. The presence of stimuli renders the opposing message to become stronger and faster while transmitted in the gelatinous small nerve fibers, then

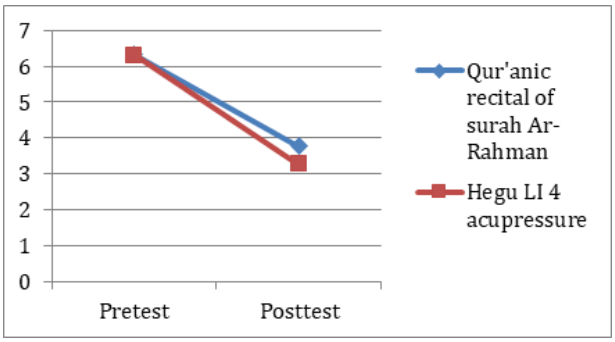

Figure 2. Comparison of Labor Pain Decrease

hindering the pain message so the brain does not process it (Koyyalamudi et al., 2016).

The administration of Hegu LI 4 acupressure is suspected to stimulate Ad fibers which inject into medulla spinalis. This process makes a segmental inhibition from pain stimuli which is inducted by C fiber in the other side of medulla spinalis. The resulting message will stimulate mechanoreceptors (Hamidzadeh et al., 2012). If the dominant impulses are induced from Delta A and C membranes, it will open said defenses which make mothers to perceive pain. But, if the pain is transmitted to the brain, the higher cortex center in the brain will modify pain perception (Schlaeger et al., 2017). Existing pressure in the Hegu LI 4 could help endorphin discharge in the body. Dabiri et al. (2014) also confirm that Hegu LI 4 acupressure could reduce the duration of labor's first stage.

Music can be utilized to minimize labor pain, as music gives energy and a message through the music's rhythm, so appropriate tempo can help mothers to regulate their breathing in labor. Commonly used music in pain distraction is classical music. Several studies prove that listening to music, especially classical music, can reduce the level of anxiety, stress, emotion, and physical pain. Music can be utilized as a pain reduction by countering stress and loosening flexed muscles as a reaction to the pain (Y.H. et al., 2010)

According to Wahida et al/ (2015), the application of Quranic recital of Surah Ar-Rahman as a therapy is proven effective in increasing the level of β-endorphin, which reduces pain intensity to laboring mothers; a recital with slow tempo with deep appreciation can induce a relaxing sensation. β-endorphin is a neuropeptide which consists of 31 amino acids produced by the hypophysis gland from the splitting of proopiomelanocortin (POMC) (Kovalitskaya & Navolotskaya, 2011). Endorphin is produced naturally by the body and has the ability to inhibit pain transmission, so pain level is reduced (Fraser & Cooper, 2009).

Another contributing factor is the belief of Al-Quran as a holy book which contains God's commandments and life guidance for Muslims. Listening to Quranic recital can give someone a feel of being closer to God's presence, and unconsciously makes the listeners submit themselves to God, which boosts a relaxing feel, suppressing anxiety and increasing β-endorphin level as a pain suppressor (Faradisi, 2012).

Quranic recital which contain human voice harmonic melody is a good healing instrument, as listening to harmonic melody can induce a comforting feel and naturally increase the endorphin level, affecting the suppression of stress, fear, and anxiety hormones (Särkämö et al., 2014). As supported by this study, the therapy of Quranic recital of Surah Ar-Rahman for 25 minutes can reduce the first stage active phase labor pain.

CONCLUSION

Hegu LI 4 acupressure and Quranic recital of Surah Ar-Rahman is proven to be used as a pain reductor in treating the first stage active phase labor pain. Acupressure group has a greater pain reduction level than Quranic recital group. The study result recommends that Hegu LI 4 acupressure can be utilized in addressing labor pain non-pharmacologically.

REFERENCES

Abdul Ghofar, L. N. (2012). *he Influence Of Playing Therapy And Music Therapy (Listening Al-Qur'an : Juz Amma) To Anxiety Respond At Toddler*.

Faradisi, F. (2012). Efektifitas Terapi Murotal dan Terapi Musik Klasik terhadap Penurunan Tingkat Kecemasan Pasien Pra Operasi di Pekalongan. *Jurnal Psikologi Stikes Muhammadiyah Pekajangan Pekalongan*. https://doi.org/10.1533/9780857096326.index

Fraser, D. M., & Cooper, M. A. (2009). Buku ajar bidan myles. *Jakarta: EGC*.

Gönenç, I. M., & Terzioğlu, F. (2020). Effects of Massage and Acupressure on Relieving Labor Pain, Reducing Labor Time, and Increasing Delivery Satisfaction. *The Journal of Nursing Research : JNR*. https://doi.org/10.1097/jnr.0000000000000344

Hamidzadeh, A., Shahpourian, F., Orak, R. J., Montazeri, A. S., & Khosravi, A. (2012). Effects of LI4 Acupressure on Labor Pain in the First Stage of Labor. *Journal of Midwifery and Women's Health*. https://doi.org/10.1111/j.1542-2011.2011.00138.x

Jones, L., Othman, M., Dowswell, T., Alfirevic, Z., Gates, S., Newburn, M., Jordan, S., Lavender, T., & Neilson, J. P. (2012). Pain management for women in labour: an overview of systematic reviews. *Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.cd009234.pub2

Kashanian, M., & Shahali, S. (2010). Effects of acupressure at the Sanyinjiao point (SP6) on the process of active phase of labor in nulliparas women. *Journal of Maternal-Fetal and Neonatal Medicine*. https://doi.org/10.3109/14767050903277662

Kovalitskaya, Y. A., & Navolotskaya, E. V. (2011). Nonopioid effect of β-endorphin. In *Biochemistry (Moscow)*. https://doi.org/10.1134/S0006297911040018

Koyyalamudi, V., Sidhu, G., Cornett, E. M., Nguyen, V., Labrie-Brown, C., Fox, C. J., & Kaye, A. D. (2016). New Labor Pain Treatment Options. In *Current Pain and Headache Reports*. https://doi.org/10.1007/s11916-016-0543-2

Larasati, T., & Alatas, F. (2016). Dismenore Primer dan Faktor Risiko Dismenore Primer pada Remaja. *Majority*.

Rahimi, F., Goli, S., Soltani, N., Rezaei, H., & Amouzeshi, Z. (2018). Effects of Complementary Therapies on Labor Pain: A Literature Review. *Modern Care Journal*. https://doi.org/10.5812/modernc.69306

Särkämö, T., Tervaniemi, M., Laitinen, S., Numminen, A., Kurki, M., Johnson, J. K., & Rantanen, P. (2014). Cognitive, emotional, and social benefits of regular musical activities in early dementia: Randomized controlled study. *Gerontologist*. https://doi.org/10.1093/geront/gnt100

Schlaeger, J. M., Gabzdyl, E. M., Bussell, J. L., Takakura, N., Yajima, H., Takayama, M., & Wilkie, D. J. (2017). Acupuncture and Acupressure in Labor. In *Journal of Midwifery and Women's Health*. https://doi.org/10.1111/jmwh.12545

Shahali, S., & Kashanian, M. (2010). Effect of acupressure at the Sanyinjiao point (SP6) on the process of active phase of labor in nulliparas women. *Journal of Babol University of Medical Sciences*. https://doi.org/10.1080/14767050903277662

Wahida, S., Andarini, S., & Nooryanto, M. (2015). Al Qur ' an Surah Arrahman Recital Therapy Increase β -Endorphin Levels and Reduce Childbirth Pain Intensity on A. *Journal Kedokteran Brawijaya*.

Wirakhmi, I. N., Utami, T., & Purnawan, I. (2018). Comparison of Listening Mozart Music With Murotal Al Quran on the Pain of Hypertension Patients. *Jurnal Keperawatan Soedirman*. https://doi.org/10.20884/1.jks.2018.13.3.813

Y.H., L., M.Y., C., & H, C. C. (2010). Effects of music therapy on labour pain and anxiety in Taiwanese first-time mothers. *Journal of Clinical Nursing*.

Yazdkhasti, M., & Pirak, A. (2016). The effect of aromatherapy with lavender essence on severity of labor pain and duration of labor in primiparous women. *Complementary Therapies in Clinical Practice*. https://doi.org/10.1016/j.ctcp.2016.08.008

Zhang, J., Troendle, J., Mikolajczyk, R., Sundaram, R., Beaver, J., & Fraser, W. (2010). The natural history of the normal first stage of labor. *Obstetrics and Gynecology*. https://doi.org/10.1097/AOG.0b013e3181d55925

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Original Research

Model Theory of Planned Behavior to Improve Adherence to Treatment and the Quality of Life in Tuberculosis Patients

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ABSTRACT

Introduction: Tuberculosis (TB) is a global public health problem and a leading cause of death from infectious diseases. The research objective was to determine the relationship between the theory of planned behavior, adherence and quality of life using the path model.

Methods: This study employed a cross-sectional design with 154 tuberculosis patients. The research was conducted in all community health centers in the Buleleng, Bali. Data on subjective norms, attitudes, perceived behavior control, intention, physical and mental HRQoL domains and medical adherence were collected. Data were analyzed using a descriptive and structural equation model feature using structural equation model.

Results: Most respondents have attitudes in the positive category and subjective norms in the good category. Perceived behavior is control in the good category, intentions in the good category and physical health in the good category. Almost all respondents have mental health in the good category and are married. All respondents in this study had adherence to treatment. The influence of subjective norms on intentions (p = <0.01), the influence of intentions on adherence (p = <0.01) and the effect of adherence on quality of life (p = <0.01) were found.

Conclusion: Subjective norms are the most important part to influence intention. Adequate TB treatment causes HRQoL to improve.

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INTRODUCTION

Tuberculosis (TB) remains a major cause of health problems. Worldwide, around 10 million people are diagnosed with TB each year. There were 1.2 million (range 1.1-1.3 million) TB deaths among HIV-negative people in 2018. TB is one of the 10 leading causes of death worldwide, and the main cause of TB is an infectious agent (Mycobacterium tuberculosis), ranking above HIV / AIDS (WHO, 2019). Based on the results of the 2013-2014 TB Indonesia Prevalence Survey, the estimated TB prevalence was 1,600,000 cases while the TB incidence was 1,000,000 and the TB mortality was 100,000 cases. In 2018, the second highest case finding was in the Regency of Buleleng at 114.6 per 100,000 population (Dinas Kesehatan Provinsi Bali, 2019).

It was evaluated that, in terms of treatment, medication adherence is one of the main obstacles faced by patients due to adverse reactions, long-term therapy and initial perception of healing, which weakens adherence and contributes to treatment neglect; Therefore, adherence to TB has become a challenge for patients, as well as for health services, and it is necessary to formulate strategies that minimize the difficulties encountered (Carla et al., 2015). Therefore, it is important to consider the social and clinical effects caused by this disease, especially those related to decreased quality of life. It should be understood that the quality of life in people with TB is a meeting of complex elements, such as disease, poverty, and stigma, which are negatively reflected in family life, work, and social activities. It is, therefore, considered important to create professional-patient-

family relationships in care and follow-up, and it is necessary to implement health measures that seek to improve treatment adherence (Farias, Medeiros, Paz, Lobo, & Ghelman, 2013).

Health-related quality of life (HRQoL) is defined as "the extent to which a patient's subjective perception of physical, mental and social well-being by an illness and its treatment"(Dion, Tousignant, Bourbeau, Menzies, & Schwartzman, 2004; Leidy, Revicki, & Genesté, 1999). Patients with chronic diseases value their mental and social wellbeing in addition to physical health (Sherbourne, Sturm, & Wells, 1999). The need to measure HRQoL is important because of the broader concept of measuring health status beyond conventional indicators, such as mortality and morbidity. HRQoL is an indicator of the effects of disease and related morbidity on regular activities and functions. As a result, HRQoL evaluations have become important health outcomes and areas of interest for policy makers, healthcare professionals and researchers. HRQoL evaluation in patients with TB is very important to identify appropriate actions to improve their health status and quality of life (Chamla, 2004).

Thus, one of the main goals in TB control is to reduce the rate of treatment neglect, because stopping treatment causes greater spread of bacilli, because patients remain as a source of transmission, contribute to preventative drugs and increase treatment time and care costs, jeopardizing the quality of life of patients (Chirinos & Meirelles, 2011). We employed the Theory of Planned Behavior as the conceptual framework to guide this process. In a systematic review of guideline implementation studies, it was the most likely theory to predict guideline adherence (Godin, Bélanger-Gravel, Eccles, & Grimshaw, 2008). This theory asserts that intention is the best predictor of behavior and that three factors mediate the strength of intention: (1) attitudes (expected value of behavioral performance); (2) subjective norms (what important others think about the behavior); and (3) self-efficacy (perception of ability to overcome barriers to behavioral performance) (Ajzen, 1985). The lack of research on the application of theory planned behavior on the quality of life of tuberculosis patients made researchers interested in conducting this research. The research objective was to determine the relationship between the theory of planned behavior, adherence and quality of life using the path model.

MATERIALS AND METHODS

This study employed a cross-sectional design with 154 tuberculosis patients who were selected using random sampling. Data collection was conducted from May to September 2019. The research was conducted in all community health centers in the Buleleng. The variables in this study are perceived behavior control, subjective norms, attitude, intention, adherence and quality of life.

The instrument in this study consisted of six questionnaires. a) *Perceived behavior control assessment questionnaire*: A closed questionnaire sheet containing questions about perceived behavioral control based on the development of the theory of planned behavior-based adherence approach model on type II DM clients (Lestarina, 2018) where researchers make modifications to the topic of questions in the questionnaire. The

Table 1. Characteristic of Respondent

Characteristic Respondent	n (%)
Age (Mean ± SD)	50 years ± 13.79
Gender	
Male	92 (40.26)
Female	62 (59.74)
Education level	
No school	7 (4.55)
Elementary school	51 (33.12)
Middle school	70 (45.45)
High school	19 (12.34)
Higher education	7 (4.55)
Employment	
Labor	67 (43.51)
Government employees	6 (3.90)
Not working	40 (25.97)
Entrepreneur	41 (26.62)
Marital status	
Single	12 (7.79)
Married	142 (92.21)
Family size member	
Less than 3 members	52 (33.77)
More than 3 members	102 (66.23)
Socioeconomic status	
< 1 million	57 (37.01)
1-2 million	54 (35.06)
> 3 million	43 (27.92)
Attitude	
Positive	87 (56.49)
Negative	67 (43.51)
Subjective norms	
Good	93 (60.39)
Poor	61 (39.61)
Perceived behavior control	
Good	80 (51.95)
Less	74 (48.05)
Intention	
Good	101 (65.58)
Less	53 (34.42)
Physical health	
Good	113 (73.38)
Less	41 (26.62)
Mental health	
Good	142 (92.21)
Less	12 (7.79)
Adherence to treatment	
Yes	154 (100)
No	0 (0)

Table 2. Characteristic Variable

Variable	n (%)
Attitude	
Positive	87 (56.49)
Negative	67 (43.51)
Subjective norms	
Good	93 (60.39)
Poor	61 (39.61)
Perceived behavior control	
Good	80 (51.95)
Less	74 (48.05)
Intention	
Good	101 (65.58)
Less	53 (34.42)
Physical health	
Good	113 (73.38)
Less	41 (26.62)
Mental health	
Good	142 (92.21)
Less	12 (7.79)
Adherence to treatment	
Yes	154 (100)
No	0 (0)

determination of the questionnaire answers using a 4-point Likert scale consists of eight questions, both if the score ≥ means data and less if the scores ≤ mean data. b) *Subjective norms assessment questionnaire*:A closed questionnaire sheet containing questions about subjective norms based on the development of a theory of planned behavior-based adherence approach model on type II DM clients (Lestarina, 2018). The researcher modified the topic of questions in the questionnaire. The determination of the questionnaire answers uses the 4-point Likert scale and consists of eight questions, both if the score ≥ means data and less if the scores ≤ mean data. c) *Attitude assessment questionnaire*: A closed questionnaire sheet containing questions about attitudinal factors modified from Knowledge and Attitudes on LTBI Treatments Acceptance (Biedenharn, 2015) and the development of a theory of planned behavior-based adherence approach model for type II DM clients (Lestarina, 2018). The researcher modified the topic of questions in the questionnaire. This questionnaire consists of 10 questions. d) *Intention assessment questionnaire*: A closed questionnaire sheet containing questions about intentions / intentions based on the development of the theory of planned behavior-based adherence approach model on type II DM clients (Lestarina, 2018). The researcher modified the topic of questions in the questionnaire. Determination of the questionnaire answers using the 4-point Likert scale consists of six questions, both if the score ≥ mean data and less if the score ≤ mean data. e) *Adherence assessment questionnaire*: The Morinsky Medication Adherence Scale (MMAS) questionnaire was used in the study, which consisted of eight statements (De las Cuevas & Peñate, 2015) which had been translated into Indonesian. Questionnaire answers using the Guttman scale, where respondents' answers are only limited to two answers, "Yes" and "No". The higher the total value indicated the patient is compliant in treatment. f) *Quality of Life assessment questionnaire*: The SF-36v2 was used in the study. This questionnaire consisted of 36 question items consisting of eight scale items of health and welfare function profiles. The following are the detailed questions asked in this questionnaire, namely Physical Functioning (PF) in question number 3, Role-Physical (RP) in question number 4, Bodily Pain (BP) in questions number 7 and 8, General Health (GH) in questions number 1 and 11, Vitality (VT) questions number 9 (a, e, g, i), Social Functioning (SF) in questions number 6 and 10, Role-Emotional (RE) question number 5, Mental Health (MH) question number 9 (b, c, d, f, h) and Self-Evaluated Transition (SET) on question number 2. Two main items assessed are: Physical Health Summary: score 30-70, with an average of 50 and Mental Health Summary: a score of 30-70, with an average of 50. For all scales and summary components, higher scores demonstrate better HRQoL (Zhou et al., 2013).

Data were analyzed using a descriptive and structural equation model feature using STATA software. Ethical approval for this study was obtained from the School of Health Sciences Buleleng Committee of Ethic Research No. 092/EC-KEPK-SB/VII/2019.

RESULTS

Table 1 shows the average age of the respondent is 50 years. Nearly half the respondents have a middle school level of education, work as a laborer, have a socioeconomic status <1 million and most respondents have more than three family members. Table 2 shows most respondent have attitudes in the positive category, subjective norms in the good category, Perceived behavior control in the good category, intentions in the good category and physical health in the good category. Almost all respondents have mental health in the good category and are married. All respondents in this study had adherence to treatment.

Table 2 shows the influence of subjective norms on intention, the effect of intention on adherence and the effect of adherence on quality of life. Goodness of fit results: $\chi 2$: 93.02, RMSEA: 0.220, CFI: 0.673, TLI: 0.464, SRMR: 0.158, AIC: 5640.15. Based on the results of the output goodness of fit statistics, the SEM model developed in this study is not yet good

Table 2. Summary of structural equation model

Variable	z	P
Attitude → Intention	1.39	0.16
Subjective Norms → Intention	6.34	<0.01
Perceived Behavior Control → Intention	-0,58	0.563
Intention → Adherence	2.64	<0.01
Adherence → QoL	14.35	<0.01

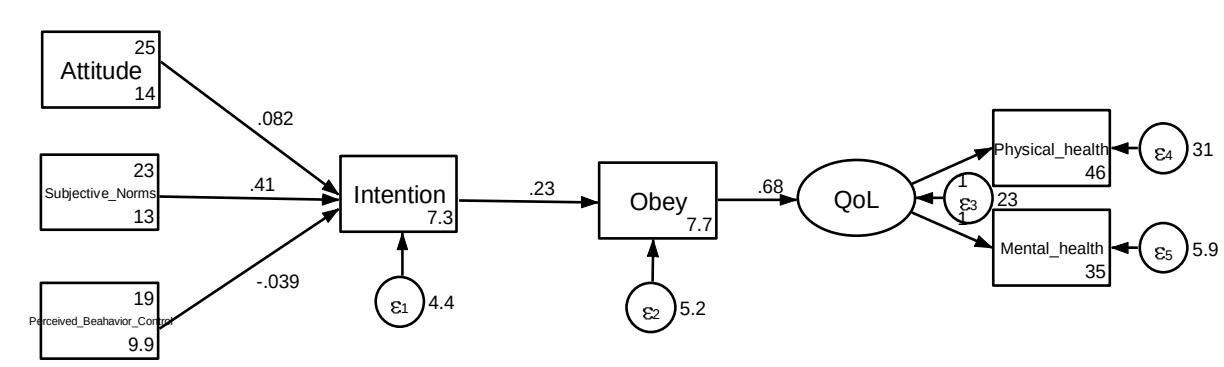

Figure 1. Path model of Relationships Between Variables

DISCUSSION

This study found that all respondents who had medication adherence were influenced by intention. A pulmonary TB patient who has good intentions with high values will have a tendency to adhere to routine treatment. The new knowledge of this research is quality of life is influenced by medication adherence to TB patients. According to Ajzen (2005) intention to perform behavior is a tendency for someone to choose to do / not do something work. This intention is determined by the extent to which the individual has a positive attitude to certain behaviors and the extent to which he chooses to do certain behaviors and he has the support of others who are influential in his life. Intention is a factor that drives how someone has a strong desire to strive for a behavior, if they have the desire / interest to do it. Intention is influenced by attitudes, subjective norms, and perceptions in controlling behavior. Research (Lestarina, 2018) shows that intention has an influence on adherence. Intention / intention is the closest factor that can predict the emergence of behavior (Alberta, Proboningsih, & Almahmudah, 2016). Adherence in taking daily medication is the behavior to adherence the suggestions or procedures from doctors about the use of drugs, which was preceded by the consultation process between patients and doctors as health service providers. Some aspects that are used to measure adherence in taking daily drugs are frequency, number of pills / other drugs, continuity, metabolism in the body, biological aspects in the blood, and physiological growth in the body. The determinants of the emergence of adherence in taking daily medication include: patient perception and behavior, interaction between patient and doctor, and medical communication between the two parties as well as intention to recover (Lailatushifah, 2012).

This study shows that respondents who have medication adherence have good quality of life. After treatment, TB still has an impact on the physical, emotional, psychological, social and economic dimensions of HRQOL (Kastien-Hilka et al., 2016). Significant side effects associated with prolonged pharmacological treatment affect TB patients in health-related quality of life (HRQoL). Thus, successful TB treatment is essential for public health (Park, George, & Choi, 2020). HRQoL is important to consider at three critical points in treatment: at the beginning of TB treatment, during the intensive treatment phase (first two months), and at the completion of treatment (Chirwa et al., 2013). In clinical research, quality of life related to health (HRQL) has become an accepted measure of outcome (Hansel, Wu, Chang, & Diette, 2004) and has been described as an individual's perception of wellbeing in physical, psychological and social aspects (Guo, Marra, & Marra, 2009). Physical and mental stress are common in TB patients and as a result lead to poor disease outcomes or poor treatment outcomes (Babikako, Neuhauser, Katamba, & Mupere, 2010). Physical function reflects the patient's capacity to perform basic daily activities, while psychological health takes into account several aspects of the mood and emotional wellbeing of the individual. This disease also affects nearly half of daily activities among patients with tuberculosis. Most patients are worried, frustrated, or disappointed with the diagnosis, and nearly a quarter initially did not receive their diagnosis (Rajeswari, Muniyandi, Balasubramanian, & Narayanan, 2005). Adequate TB treatment causes HRQoL to improve (Louw, Mabaso, & Peltzer, 2016).

CONCLUSION

TB patients who have good intentions with high scores will have a tendency to adhere to routine treatment. Quality of life is a complex concept which includes physical and mental health. Patients who take adequate TB treatment affect their quality of life,

mentally and physically. In providing health promotion related to medication adherence, community service center nurses must increase the TB patient's intention to seek treatment so that quality of life is good. A limitation in the study was that adherence was observed only once. The study cannot be a reference adherence of TB patients in Indonesia.

REFERENCES

Ajzen, I. (1985). From intention to action: A theory of palnned behavior. In J. Kuhl & J. Beckmann (Eds.), *springer series in social psychology* (pp. 11–39). Heidelberg: Springer.

Ajzen, I. (2005). *Attitudes, Personality and Behavior : Second Edition*. Poland: Mc Graw Hill.

Alberta, L. T., Proboningsih, J., & Almahmudah, M. (2016). The Improvement of Low Salt Diet Behavior based on Theory of Planned Behavior on Elderly with Hypertension. *Jurnal NERS*, *9*(2), 297. https://doi.org/10.20473/jn.v9i22014.297-304

Babikako, H. M., Neuhauser, D., Katamba, A., & Mupere, E. (2010). Feasibility, reliability and validity of health-related quality of life questionnaire among adult pulmonary tuberculosis patients in urban Uganda: Cross-sectional study. *Health and Quality of Life Outcomes*, *8*, 93. https://doi.org/10.1186/1477-7525-8-93

Biedenharn, A. M. (2015). *Assessment of Knowledge and Attitudes on Latent Tuberculosis Treatment Acceptance in a Southwest Ohio Public Health Clinic*.

Carla, L., Oliveira, S., De Almeida Nogueira, J., Duarte De Sá, L., Palha, P. F., Alves Da Silva, C., … Villa, S. (2015). The discourse of individuals on feelings associated with coping with tuberculosis* A discursividade do sujeito sobre sentimentos associados ao enfrentamento da tuberculose. *Revista Eletrônica de Enfermagem*, *17*(1). https://doi.org/10.5216/ree.v17i1.24523

Chamla, D. (2004). The assessment of patients' health-related quality of life during tuberculosis treatment in Wuhan, China. *International Journal of Tuberculosis and Lung Disease*, *8*(9), 1100–1106.

Chirinos, N. E. C., & Meirelles, B. H. S. (2011). Factors related to abandoning tuberculosis treatment: An integrative review. *Texto e Contexto Enfermagem*, *20*(3), 399–406. https://doi.org/10.1590/S0104-07072011000300023

Chirwa, T., Nyasulu, P., Chirwa, E., Ketlogetswe, A., Bello, G., Dambe, I., … Joshua, M. (2013). Levels of Tuberculosis Treatment Adherence among Sputum Smear Positive Pulmonary Tuberculosis Patients Attending Care at Zomba Central Hospital, Southern Malawi, 2007–2008. *PLoS ONE*, *8*(5), e63050. https://doi.org/10.1371/journal.pone.0063050

De las Cuevas, C., & Peñate, W. (2015). Psychometric properties of the eight-item Morisky Medication Adherence Scale (MMAS-8) in a psychiatric outpatient setting. *International Journal of Clinical and Health Psychology*, *15*(2), 121–129. https://doi.org/10.1016/j.ijchp.2014.11.003

Dinas Kesehatan Provinsi Bali. (2019). *Profil Kesehatan Provinsi Bali Tahun 2018*. Denpasar: Dinas Kesehatan Provinsi Bali.

Dion, M. J., Tousignant, P., Bourbeau, J., Menzies, D., & Schwartzman, K. (2004). Feasibility and reliability of health-related quality of life measurements among tuberculosis patients. *Quality of Life Research*, *13*(3), 653–665. https://doi.org/10.1023/B:QURE.0000021320.89524.64

Farias, S. N. P. de, Medeiros, C. R. da S., Paz, E. P. A., Lobo, A. de J. S., & Ghelman, L. G. (2013). Completeness in caring: study of quality of life in clients with tuberculosis. *Escola Anna Nery*, *17*(4), 749–754. https://doi.org/10.5935/1414-8145.20130020

Godin, G., Bélanger-Gravel, A., Eccles, M., & Grimshaw, J. (2008). Healthcare professionals' intentions and behaviours: A systematic review of studies based on social cognitive theories. *Implementation Science*, Vol. 3. https://doi.org/10.1186/1748-5908-3-36

Guo, N., Marra, F., & Marra, C. A. (2009, February). Measuring health-related quality of life in tuberculosis: A systematic review. *Health and Quality of Life Outcomes*, Vol. 7, p. 14. https://doi.org/10.1186/1477-7525-7-14

Hansel, N. N., Wu, A. W., Chang, B., & Diette, G. B. (2004, April). Quality of life in tuberculosis: Patient and provider perspectives. *Quality of Life Research*, Vol. 13, pp. 639–652. https://doi.org/10.1023/B:QURE.0000021317.12945.f0

Kastien-Hilka, T., Abulfathi, A., Rosenkranz, B., Bennett, B., Schwenkglenks, M., & Sinanovic, E. (2016). Health-related quality of life and its association with medication adherence in active pulmonary tuberculosis– a systematic review of global literature with focus on South Africa. *Health and Quality of Life Outcomes*, *14*(1), 42. https://doi.org/10.1186/s12955-016-0442-6

Lailatushifah, S. N. F. (2012). *Kepatuhan Pasien Yang Menderita Penyakit Kronis Dalam Mengkonsumsi Obat Harian*. Fakultas Psikologi Universitas Mercubuana.

Leidy, N. K., Revicki, D. A., & Genesté, B. (1999). Recommendations for Evaluating the Validity of Quality of Life Claims for Labeling and Promotion. *Value in Health*, *2*(2), 113–127. https://doi.org/10.1046/j.1524-4733.1999.02210.x

Lestarina, N. N. W. (2018). Theory of Planned Behavior sebagai Upaya Peningkatan

Kepatuhan pada Klien Diabetes Melitus. *Media Kesehatan Masyarakat Indonesia*, *14*(2), 201. https://doi.org/10.30597/mkmi.v14i2.3987

Louw, J. S., Mabaso, M., & Peltzer, K. (2016). Change in health-related quality of life among pulmonary tuberculosis patients at primary health care settings in South Africa: A prospective cohort study. *PLoS ONE*, *11*(5). https://doi.org/10.1371/journal.pone.0151892

Park, S., George, M., & Choi, J. Y. (2020). Quality of life in Korean tuberculosis patients: A longitudinal study. *Public Health Nursing*, phn.12691. https://doi.org/10.1111/phn.12691

Rajeswari, R., Muniyandi, M., Balasubramanian, R., & Narayanan, P. R. (2005). Perceptions of tuberculosis patients about their physical, mental and social well-being: A field report from south India. *Social Science and Medicine*, *60*(8), 1845–1853. https://doi.org/10.1016/j.socscimed.2004.08.024

Sherbourne, C. D., Sturm, R., & Wells, K. B. (1999). What outcomes matter to patients? *Journal of General Internal Medicine*, *14*(6), 357–363. https://doi.org/10.1046/j.1525-1497.1999.00354.x

WHO. (2019). Global Tuberculosis Report 2019. Retrieved from http://apps.who.int/iris

Zhou, K., Zhuang, G., Zhang, H., Liang, P., Yin, J., Kou, L., … You, L. (2013). Psychometrics of the Short Form 36 Health Survey Version 2 (SF-36v2) and the Quality of Life Scale for Drug Addicts (QOL-DAv2.0) in Chinese Mainland Patients with Methadone Maintenance Treatment. *PLoS ONE*, *8*(11), e79828. https://doi.org/10.1371/journal.pone.0079828

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Original Research

Effectiveness of Health Education and Nutrition Rehabilitation Toward Community Empowerment for Children Aged Less Than 5 Years with Stunting: A Quasi-Experimental Design

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ABSTRACT

Introduction: Globally, more than one child in four under the age of five is too short for their age. Although attempts to reduce stunting have succeeded globally, stunting rates in Indonesia have unfortunately remained largely stagnant. However, few studies have been conducted in Indonesia, particularly in Banten to develop and evaluate the education program combining with nutrition rehabilitation intervention to reduce stunting. The purpose of this study was to test effectiveness of education and nutrition rehabilitation to increase community empowerment for stunting in Serang Banten.

Methods: This study was conducted using a quasi-experimental design with the reversed-treatment non-equivalent control group design. The study used 200 people as research samples. The analysis tools used include descriptive statistics and paired t tests

Results: The results of this study showed that education and nutrition rehabilitation effectively to increased community empowerment in overcoming children with stunting ($p<0.05$).

Conclusion: Nutrition education and rehabilitation management needs to be improved in an effort to reproduce the status of malnutrition or malnutrition into normal nutritional status, particularly in Serang City.

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INTRODUCTION

Globally, more than one child in four under the age of five is too short for their age (UNICEF, 2013). Low height-for-age or stunting represents failure to attain a minimum stature correlated with present and future growth and development and is a main chronic undernutrition indicator. Stunting means poverty and unhealthy working conditions. In 2012, nearly 33 percent of urban residents in the developing world lived in the suburbs and this is expected to reach two billion people living in slum communities in less developed countries by 2030 (United Nations, 2012). In the developing world, more than 100,000 people shift to slums each day. Actually, almost 1.5 billion citizens live in urban suburbs without proper access to healthcare, clean water and sanitation (British Red Cross, 2012). Evidence indicates that children living in the slums are much more likely than children who live somewhere else in the city to suffer from malnutrition, including stunting (Awasthi & Agarwal, 2003; Ghosh & Shah, 2004).

Stunting is a result of chronic undernutrition during the most important periods of early life growth and development. Stunted children suffer from compromised development with irreversible adult consequences and face a high risk of morbidity and mortality (Dewey & Begum, 2011; McDonald et al., 2013). Stunting in children can be measured by anthropometry using physical growth data. Development faltering often happens between the ages of three months and 18 to 24 months (Victora et al., 2010). Stunting prevalence rises very rapidly between 12 and 24 months (40 percent to 54 percent), continues to rise until 36 months of age (58 percent), and then remains relatively stable until 5

years of age (55 percent) (Bhutta et al., 2013). Indonesia is the fifth highest country in stunting prevalence among children under five in Asia (WHO, 2018). In 2018, as many as 30.8 percent of children under five in Indonesia experienced stunting and Banten province was the fifth province to become a priority of stunting handling in Java Island (Kemenkes RI., 2018). In Banten, the stunting rate has increased significantly from year to year, in 2018 as many as 60,806 cases of stunting were identified.

The WHO hypothesis on the history, causes, and consequences of childhood stunting, which was published in 2013, identifies numerous factors directly leading to stunted growth and development (Stewart et al., 2013). While the WHO framework was based on global data analysis, the framework used to evaluate the contributors of stunting at the national level is critical as national health policies are often based on the available national and sub-national data. The WHO Stunting Framework defines community and social factors as 'contextual' and classifies them into six groups: (1) political economy; (2) health and healthcare; (3) education; (4) society and culture; (5) farming and food systems; and (6) water, sanitation and climate. The current evidence of correlation between these factors and stunting is minimal (Stewart et al., 2013), and various background variables (e.g. population density, per capita national income, level of democracy (Pridmore & Hill, 2009) are measured at the national level and are, therefore, not appropriate for household or community level research. According to the WHO conceptual framework for determinants of a child, stunting showed that household and family factors–low maternal height, premature birth, short birth length, low maternal education, and low household wealth—are important proximate determinants of child stunting in Indonesia (Beal et al., 2018).

Although attempts to reduce stunting have succeeded globally (Lundeen et al., 2014), notably in Ethiopia and the state of Mahrastrata, India (Haddad et al., 2014), stunting rates have unfortunately remained largely stagnant in sub-Saharan Africa and South Asia (Bhutta et al., 2013). Achieving global health goals of the WHO in 2025 to minimize stunting by 40 percent in children under the age of five would rely on sustained efforts to prevent stunting within slums. In Indonesia, currently, the government program in handling stunting has been carried out through two approaches, namely specific and sensitive nutrition interventions (Kemenkes RI., 2018). However, the stunting program is still not implemented optimally and here is less involvement of community to participate in stunting reduction, as evidenced by the continued increase in the stunting rate. So, we need an approach or intervention that is able to involve community participation outside the health sector.

Community empowerment is the participation of all community members in solving community problems (Bierman et al., 2014). There are several interventions to prompt community participation, one of which is education. The results of previous studies indicate that education is an effective way to increase knowledge, which will have an impact on increasing behavior to participate in problem solving (Notoatmodjo, 2014). However, educational education alone is not enough to sustain sustainable participants. Decreases in the stunting can be accomplished through measures based on facts. Strong evidence was found in the Lancet series on maternal and child undernutrition for a range of measures that are effective in supporting children's health (Bhutta et al., 2013). By integrating and scaling up to 90 percent of these documented nutrition-specific interventions, stunting could be reduced by 20 percent, representing 33.5 million fewer stunted children (Bhutta et al., 2013; Fenske et al., 2013; Milman et al., 2005; Remans et al., 2011). Specifically, proposed strategies to address the underlying causes of stunting would concentrate on improving nutrition and avoiding associated diseases. However, few studies have been conducted in Indonesia, particularly in Banten, to develop and evaluate the education program combining with nutrition rehabilitation intervention to reduce stunting. Therefore, the purpose of this study was to primarily test the effectiveness of health education and nutrition rehabilitation toward community empowerment for children aged less than 5 years with stunting.

MATERIALS AND METHODS

Study design

This study was conducted using a quasi-experimental design with the reversed-treatment non-equivalent control group design with pre-test and post-test conducted in Serang City, Banten. Intervention group was provided education and rehabilitation nutrition for two week and control group only provided with education through leaflet with the topic focus on general information about stunting and its prevention. In the first week, the cadre received two sessions of comprehensive workshops, each session was two hours and the topics were regarding general information about stunting, prevention, and treatment and discussion about their ability to help children aged less than 5 years in recovery from stunting and preventing relapse. Workshops were delivered in Bahasa Indonesia using tutorial and discussion methods. In the second week, the cadre was provided with rehabilitation training in two sessions (each session was two hours) with the topic about nutrition intervention that can be done by the cadre, for example modification of nutrition for children, and cooking class, and also discussing about how to empower their ability to help children with undernutrition. Before the workshop session began, all participants received a pre-test regarding their understanding through group discussion about stunting and most of them showed similar understanding about malnutrition.

Sample

The sample in this study was a cadre and other volunteers that were listed officially in the public health center in Serang City, Banten Province, Indonesia. The inclusion criteria in this study were age over 18 years old, able to communicate, and willing to be respondent. Inactive cadre means those who registered in the database in the public health centre but did not involve in activities provided by the community health centre more than three times. Exclusion criterion was inactive cadre. The sample size was calculated using G-Power Software Version 3.1.6 assuming t-test, $\alpha = 0.05$, effect size = 0.15 (Cohen, 1992), power level = 0.80. So that the total sample recruited was 100 cadres for each group. Convenience sampling was used to select participants.

Instrument

The demographic characteristics were collected, including age, gender, and education level. Community empowerment was measured using a self-developed instrument constructed from four indicators, namely contribution of thought, contribution of funds, contribution of personnel, and contribution of facilities. This instrument was developed based on our previously unpublished qualitative study. This instrument included a Likert scale with 1 indicating never and 5 indicating always. After discussion with an expert, finally the instrument measured only three aspects, contribution of thought, contribution of personnel, and contribution of funds with total 15 items, five items for each indicator. The content validity index ranged from 0.64 to 0.79. The Cronbach's alpha in the current study was 0.68.

Data Collection Procedure

Prior to this research, an ethics permit was obtained from the affiliated university (EB20346). After permission was obtained, the researcher explained the objectives, inclusion and exclusion criteria, procedures and ethical protection to midwives and cadres. Cadres helped choose samples according to the criteria. Respondents who met the criteria were then given an explanation of the intervention and after that signed the informed consent sheet. Before intervention, respondents filled out the questionnaire first and then intervened with education and rehabilitation for two weeks. After completion of the intervention, a post-test was taken again.

Data analysis

Normality test with Kolmogorov Smirnov was first done to see whether the data distribution was normal or not. When the data were normal, the univariate analysis used the mean and standard deviation to describe the demographic characteristics and variable of community empowerment. Paired sample t-test was used to see the difference before and after the intervention. Data processing was performed using SPSS software version 22.

RESULTS

Table 1 shows that the average age of the control and control group is over 30 years, mostly women, with junior high school education. There was no significant difference between intervention and control group in terms of age, gender, and education level, which mean that both intervention and control groups had similar characteristics even without random sampling.

In the intervention group, the mean of community empowerment score before intervention was 11.11 (SD=4.88), and after intervention there was an increased score of community empowerment as much as 4.17, with mean score after intervention of 13.50 (SD=2.22). According to the results of paired t-test, it showed a significant improvement of community empowerment after intervention with p-value 0.000 (Table 2). While, in the control group, the mean of community empowerment score before intervention was 13.42 (SD=6.60), and after intervention there was an increased score of community empowerment as much as 0.09, with

Table 1. Demographic characteristics of respondent (n=200)

Variables	Intervention group (n=100)	Control group (n=100)	p-value
Age, mean (SD)	34.4 (3.3)	33.4 (3.4)	0.142
Gender			
Male	30 (30)	27 (27)	0.078
Female	70 (70)	73 (73)	
Education level			0.271
Elementary school	35 (35)	37 (37)	
Junior high school	55 (55)	49 (49)	
Senior high school	10 (10)	14 (14)	
University	0	0	

Tabel 2. Differences in community empowerment before and after intervention in both groups (n=200)

Group	Before intervention Mean (SD)	After Intervention Mean (SD)	Mean different	p-value for paired t test	p-value for independent t test
Intervention group	11.11 (4.88)	13.50 (2.22)	4.17	0.000	0.001
Control group	13.42 (6.60)	13.49 (3.29)	0.09	0.922	

mean score after intervention of 13.49 (SD=3.29). According to the results of paired t-test, it showed non- significant improvement of community empowerment after intervention with p-value 0.922. In addition, independent t-test showed that the intervention group had significant improvement in the score of community empowerment after intervention compared to the control group, with p-value 0.001.

DISCUSSION

There is a significant improvement of community empowerment in stunting prevention after being given intervention. These results are consistent with Astama et al. (2012), that prevention through nutrition education and rehabilitation is an alternative model for tackling under-fives' malnutrition based on community empowerment through four elements, namely: (1) education, (2) PMT together , (3) health checks, medications and micronutrients and (4) fostering community participation to contribute in the form of food, energy, or money. The implications of this result are nutrition education and rehabilitation by helping, facilitating, and motivating mothers of under-fives and with poor nutrition, failing to improve their child's nutritional status, and changing behavior in caring for children and providing food to children. The obstacles are the low level of society and the lack of public knowledge about the importance of overcoming malnutrition in children under five which has an impact on brain growth and development in children.

We found that community empowerment before intervention among two groups showed a low score. This result is not in accordance with previous study finding that the development paradigm that is highly developed now is the empowerment paradigm, which consists of community participation (Abadi, 2014). It was also explained that community participation is the participation of all community members in solving community problems (Abadi, 2014). The results are also not in accordance with Aidha (2012), that the level of community participation, both from the scope of the program and from the results of measurements on the community, shows the same results i.e. the level of community participation is below the established national standard of 80 percent. If the D / S coverage is below 80 percent then it is said that community participation for monitoring growth and weight development is very low. Thus, support from family and community will influence the actions of mothers in utilizing community health activity to improve family health, especially weighing children under five, examining sick children and others.

Our study may have several limitations. First, measurement of community empowerment still needs to be tested for its construct validity. Second, our study was carried out for only two weeks after ending of the impact evaluation and termination, which may be considered as a relatively short period. Nevertheless, this period was sufficient to examine how intervention exposure changed even shortly after the ending. Further research on the effects of longer duration of sustainability is needed. Third, our study of sustained outcomes was focused on the effects among the target population of the nutrition interventions. We did not examine the policy and regulatory institutions or organizational levels in connection to sustained service delivery, which was undertaken by a separate study.

CONCLUSION

In conclusion, education and nutrition rehabilitation through workshop and training in two sessions for two weeks was effective to increase community empowerment for stunting reduction. Nutrition education and rehabilitation management needs to be improved in an effort to reproduce the status of malnutrition into normal nutritional status, particularly in Serang City. Community empowerment management needs to be improved by instilling awareness to be involved in dealing with toddlers with malnutrition and of malnutrition being the normal nutritional status. This study provides a new approach for prevention of stunting in Indonesia that can be basic evidence for healthcare policy to improve prevention programs on stunting with the local community and widely provide cultural training for all communities through cadres as a first line of the healthcare system in Indonesia.

REFERENCES

Abadi, T. (2014). Performance E-Government Untuk Peningkatan Partisipasi Masyarakat Dalam Pembangunan Infrastruktur Di Kabupaten Sidoarjo. *Jurnal Kawistara*, *4*. https://doi.org/10.22146/kawistara.6379

Aidha, Z. (2012). Analisis Implementasi Pemberdayaan Masyarakat Dalam Strategi Promosi Kesehatan Dan Pengaruhnya Terhadap Partisipasi Masyarakat Dalam Pencegahan Gizi Buruk Pada Balita Di Kecamatan Helvetia Medan. *Jurnal Ilmiah Penelitian Kesehatan*, *2*(2). http://jurnal.uinsu.ac.id/index.php/kesmas/article/view/1123/889

Astama, D., Widodo, A. K. M. K. A., & Ambarwati, S. K. N. E. M. K. W. N. (2012). *Pengaruh Pendidikan Kesehatan Pada Ibu-Ibu Kader Pemberdayaan Keluarga Dan Kemasyarakatan (PKK) Dalam Mengubah Pengetahuan Dan Sikap Tentang Pencegahan Demam Berdarah Dengue Di Desa Pucangan Kartasura*.

Awasthi, S., & Agarwal, S. (2003). Determinants of childhood mortality and morbidity in urban slums in India. *Indian Pediatrics*, *40*(12), 1145–1161.

Beal, T., Tumilowicz, A., Sutrisna, A., Izwardy, D., & Neufeld, L. M. (2018). A review of child stunting determinants in Indonesia. *Maternal & Child Nutrition*, *14*(4), e12617. https://doi.org/10.1111/mcn.12617

Bhutta, Z. A., Das, J. K., Rizvi, A., Gaffey, M. F., Walker, N., Horton, S., Webb, P., Lartey, A., & Black, R. E. (2013). Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *Lancet (London, England)*, *382*(9890), 452–477. https://doi.org/10.1016/S0140-6736(13)60996-4

Bierman, G., Abadi, M., & Torgersen, M. (2014). *Understanding TypeScript* (Vol. 8586). https://doi.org/10.1007/978-3-662-44202-9_11

British Red Cross. (2012). *Learning from the City: British Red Cross Urban Learning Project Scoping Study.*

Dewey, K. G., & Begum, K. (2011). Long-term consequences of stunting in early life. *Maternal & Child Nutrition*, *7 Suppl 3*(Suppl 3), 5–18. https://doi.org/10.1111/j.1740-8709.2011.00349.x

Fenske, N., Burns, J., Hothorn, T., & Rehfuess, E. A. (2013). Understanding Child Stunting in India: A Comprehensive Analysis of Socio-Economic, Nutritional and Environmental Determinants Using Additive Quantile Regression. *PLOS ONE*, *8*(11), e78692. https://doi.org/10.1371/journal.pone.0078692

Ghosh, S., & Shah, D. (2004). Nutritional problems in urban slum children. *Indian Pediatrics*, *41*(7), 682–696.

Haddad, L., Nisbett, N., Barnett, I., & Valli, E. (2014). *Maharashtr_s Child Stunting Declines: What is Driving Them? Findings of a Multidisciplinary Analysis*.

Kemenkes RI. (2018). *Hasil utama riskesdas 2018.* (K. RI. (ed.)).

Lundeen, E. A., Stein, A. D., Adair, L. S., Behrman, J. R., Bhargava, S. K., Dearden, K. A., Gigante, D., Norris, S. A., Richter, L. M., Fall, C. H. D., Martorell, R., Sachdev, H. S., & Victora, C. G. (2014). Height-for-age z scores increase despite increasing height deficits among children in 5 developing countries. *The American Journal of Clinical Nutrition*, *100*(3), 821–825. https://doi.org/10.3945/ajcn.114.084368

McDonald, C. M., Olofin, I., Flaxman, S., Fawzi, W. W., Spiegelman, D., Caulfield, L. E., Black, R. E., Ezzati, M., & Danaei, G. (2013). The effect of multiple anthropometric deficits on child mortality: meta-analysis of individual data in 10 prospective studies from developing countries. *The American Journal of Clinical Nutrition*, *97*(4), 896–901. https://doi.org/10.3945/ajcn.112.047639

Milman, A., Frongillo, E. A., de Onis, M., & Hwang, J.-Y. (2005). Differential improvement among countries in child stunting is associated with long-term development and specific interventions. *The Journal of Nutrition*, *135*(6), 1415–1422. https://doi.org/10.1093/jn/135.6.1415

Notoatmodjo, S. (2014). *Promosi Kesehatan dan Ilmu Perilaku* (cetakan II). Rineka Cipta.

Pridmore & Hill. (2009). Addressing The Underlying And Basic Causes Of Child Undernutrition In Developing Countries : What Works And Why ? Evaluation Study 2009 / 2 Addressing the Underlying and Basic Causes of Child Undernutrition in Developing Countries : What Works and Why ? *Foreign Affairs*, *2*(April), 1–97.

Remans, R., Pronyk, P. M., Fanzo, J. C., Chen, J., Palm, C. A., Nemser, B., Muniz, M., Radunsky, A., Abay, A. H., Coulibaly, M., Mensah-Homiah, J., Wagah, M., An, X., Mwaura, C., Quintana, E., Somers, M. A., Sanchez, P. A., Sachs, S. E., McArthur, J. W., & Sachs, J. D. (2011). Multisector intervention to accelerate reductions in child stunting: An observational study from 9 sub-Saharan African countries. *American Journal of Clinical Nutrition*, *94*(6), 1632–1642. https://doi.org/10.3945/ajcn.111.020099

Stewart, C. P., Iannotti, L., Dewey, K. G., Michaelsen, K. F., & Onyango, A. W. (2013). Contextualising complementary feeding in a broader framework for stunting prevention. *Maternal & Child Nutrition*, *9 Suppl 2*(Suppl 2), 27–45. https://doi.org/10.1111/mcn.12088

UNICEF. (2013). *Improving Child Nutrition. The achievable imperative for global progress.* https://reliefweb.int/report/world/improving-child-nutrition-achievable-imperative-global-progress#:~:

United Nations. (2012). *The Millennium Development Goals Report 2012.* https://www.un.org/millenniumgoals/pdf/MDG Report 2012.pdf

Victora, C. G., de Onis, M., Hallal, P. C., Blössner, M., & Shrimpton, R. (2010). Worldwide timing of growth faltering: revisiting implications for interventions. *Pediatrics*, *125*(3), e473-80. https://doi.org/10.1542/peds.2009-1519

WHO. (2018). *Global Nutrition Report 2018 - Executive Summary*. 12. https://doi.org/10.2499/9780896295643