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EDITORIAL

Social Capital in Community Nursing Profession: Rural Vs. Urban Communities

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Social capital is a complex, socially constructed phenomenon and essential in community nursing, basically considering the rurality variations versus urbanity discourse. Applying sociological theory in rurality and urbanity discourse provides a deeper insight into the microscopic and macroscopic factors that concern social capital. Sometimes social capital is used as a core concept of micro-sociological theory to illustrate the social network where the human interactions are the major components. Therefore, networking in social capital aims to enhance trust and civism. In such a view, the nurse community interpersonal ties and skills are essential to sustain social capital. It distinguishes the civism characteristics between rural versus urban population.

A network and trust relationship, for instance, maintains the social capital of rural communities more than urban ones because of the vital kinship status, which constructs the civism of urban communities. This indicates that interpersonal relationships, which construct rural communities' networks, create a powerful societal supportive system. However, the out-migration of younger communities negatively impacts the interpersonal and kinship status, threatening rural social capital sustainability. Accordingly, it is logical to assume that social capital is more substantial in rural communities, though it is only sustained within the older generation. Indeed, aging and a higher morbidity rate leads the older population to be more isolated from younger, especially the middle-age generations.

In contrast, network and interpersonal relationships in urban communities seem to be more casual than in rural communities. Based on that view, urbanization changes the pattern of networking and interpersonal relationships. This leads the younger population to seek alternatives to sustain interpersonal relationships, such as social media networking. However, these alternatives may not support the real meaning of civism and trust relationships. Therefore, and from a microscopic view, some controversies impact social capital sustainability in urban communities.

Alternatively, social capital is a significant concept of a macro-sociological theory wherein that lens, societal and cultural construct, and collective human actions within a society are major social capital components. Several scholars emphasize the importance of social ties and shared norms to societal wellbeing and economic efficiency. Such a concept illustrates the social inequality and hierarchical social structures among rural and urban communities. Therefore, it is logical to classify social capital sustainability at a mesoscopic level into economic sustainability and ethnic/cultural sustainability. These factors are overlapped with each other, though all of them are influenced by geographical and non-geographical factors.

The low and unstable economic status in rural communities negatively impacts the sustainability of social capital finical status. The industrialization of agriculture increases the low-rate wages jobs among the rural population and evidence asserts that manufactured and industrialized agriculture shifts social capital financial status from rural

areas to urban and suburban areas. Indeed, the degree of unstained social capital varies between rural communities based on geographical location as well. For example, residents in rural areas, especially those with low income, are more isolated from taking the benefits of the minimal types of social services. Furthermore, considering the state exchange of the Affordable Care Act (ACA), it is vital to address the potential disparities among rural communities in states that follow this legislation versus those which do not. This leads to inequalities in accessing and utilizing the most needed social services, such as healthcare.

There are various assumptions about the role of ethnic diversity in social capital. Some argue that it harms social capital at the community level, where ethnically diverse neighborhoods in urban communities decrease the social capital acculturation in urban and suburban communities more than rural communities. In contrast, some evidence highlights the association between ethnic diversity and trust, explaining an insignificant one percent of neighborhood-level fluctuation. The differential effect of diversity on neighborhood norms is less apparent once other factors, such as neighborhood poverty, are considered. However, there has also been found to be a slightly negative impact of diversity on social norms. Therefore, it is logical to consider ethnic diversity as a factor that has other contextual variables.

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EDITORIAL

Social Capital in Community Nursing Profession: Rural Vs. Urban Communities

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states that follow this legislation versus those which do not. This leads to inequalities in accessing and utilizing the most needed social services, such as healthcare.

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Original Research

Depression and the Quality of Life among Filipino Chemotherapy Patients

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ABSTRACT

Introduction: Undergoing chemotherapy has adverse effects to the physical, emotional and mental health of the chemotherapy patient that may cause depression and disturb the quality of the chemotherapy patient's life. Hence, the study aimed to determine the level of depression and the quality of the Filipino chemotherapy patient's life.

Methods: The study applied a quantitative descriptive-correlational research design. Purposive sampling was done to identify the 102 respondents, who were Filipino chemotherapy patients admitted in a tertiary hospital in Eastern Visayas from December 2018 to March 2019. The study used standardized questionnaires and these were distributed among the respondents. To analyze the data, descriptive statistics and total scores were used. Likewise, Pearson-Product Moment Coefficient analysis was also used to determine the correlation between the two variables.

Results: 102 patients participated in the study. Findings indicated that most of the respondents (52.38%) experienced mild depression and that their quality of life is good (97.05%). However, there were four respondents who experienced moderate depression. Moreover, results also show that there is a strong relationship between the two variables (R=-0.053; P-value=0.000).

Conclusion: The study's result highlights the crafting of a home-based care plan that will guide the chemotherapy patients and their families in the prevention of depression. Likewise, it is also aimed in achieving a favorable quality of the chemotherapy patient's life.

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INTRODUCTION

Chemotherapy has been used by many cancer patients to eradicate cancer cells in their bodies, not only in the United States but also in Asian countries like the Philippines. According to Chabner and Roberts (2005), the treatment method has been utilized by cancer patients to achieve higher survival rate. During the treatment, it not only kills the cancer cells, but also destroys the normal and healthy cells. Hence, the use of chemotherapy treatment has adverse effects which can cause changes not only to the body, but also to the emotional and mental state of the cancer patient undergoing chemotherapy (American Cancer Society, 2014).

Depression is one of the common health issues faced by cancer patients undergoing chemotherapy and which is characterized by a decrease or loss of interest in things, guilt, low self-confidence, sleeping and eating disorders, fatigue and inability to perform daily activities (Smith, 2015). Studies show that a range of 1.5 to 53% prevalence rate of depression occurs during chemotherapy treatment and 25% of the patients experience a severe level of depression, which implies that both depression and the quality of the cancer patient's life are positively associated (Craig & Abeloff, 2004).

The quality of a person's life pertains to the insight of life, morals, interest and indicates one's general wellbeing (World Health Organization, 1998) . Hence, one of the priorities in cancer management is achieving a favorable quality of life since it indicates one's effectiveness of cancer treatment modality (Ngelangel, 2012). Several studies revealed that the majority had a good quality of life immediately after chemotherapy treatment. However, the occurrence of bodily and mental issues, such as pain and depression, were still evident, which can hamper the

quality of one's life (Bower et al., 2006). Furthermore, studies also suggest that the quality of a cancer patient's life who has had 3-5 chemotherapy cycles is good and also claimed that their sleep patterns were improved after chemotherapy. Likewise, study also showed that the number of chemotherapy cycles is associated with the cancer patient's quality of life (Dehkordi, Heydarnejad, & Fatehi, 2009).

With the above given premise, it is, therefore, necessary that healthcare providers such as nurses are able to recognize the signs and symptoms of depression so as to be able to render prompt management and treatment to avoid further complications. Moreover, several studies were conducted that focused on measuring the level of depression and its association with the quality of the cancer patient's life in foreign countries, but not in the Philippines. Few studies were documented about the depression level and the quality of Filipino chemotherapy patients' life. Hence, this issue has been addressed by conducting this study among chemotherapy patients residing in Eastern Visayas which has aimed to determine the level of depression and the quality of life of Filipino chemotherapy patients.

MATERIALS AND METHODS

The study utilized a descriptive- correlational design which used two standardized tools for data gathering. This study focused on the assessment of the level of depression and the quality of the chemotherapy patients' life in a tertiary categorized hospital in Eastern Visayas. Likewise, it also examined the association of the depression level toward the quality of the chemotherapy patients' life.

The study sample was a total of 102 cancer patients undergoing chemotherapy treatment in a tertiary hospital in Eastern Visayas. The purposive sampling method was used in the selection of the respondents. The inclusion criteria were the following (1) Must be 18 years old and above; (2) must be a Filipino; (3) Lives in Eastern Visayas; (4) A cancer patient undergoing chemotherapy from December 2018-March 2019; (5) Completed at least three chemotherapy sessions prior to data collection;(6) Can understand the English language; (7) Willing to be part of the study. Those not mentioned in the inclusion criteria are the exclusion criteria.

The study used two standardized tools. The first was Beck's Depression Inventory tool (BDI) tool, which is composed of 21 items and the second is the Quality of Life tool for those treated with anti-cancer drugs (QoL-ACD), which is composed of 22 items. BDI is answerable by the rating of 0-3 and the level of depression is determined by calculating the sum total of scores (Beck, Steer, & Gabin, 1996). On the other hand, QOL-ACD is a tool which is answerable by the scale of 0-5 and the quality of life is determined by calculating the average score (Kurihara et al., 1999).

First, transmittal letters were sent to the tertiary hospitals where the cancer patients were undergoing chemotherapy treatment for their permission and approval to conduct the study. After the approval, the list of qualified respondents was obtained from the selected tertiary hospital. Attendance during the fourth week of chemotherapy treatment was done by the researcher to find possible respondents. Before the actual data gathering, the informed consents of the respondents were secured by asking them to sign the informed consent form, which indicated the respondent's voluntary decision to be part of study after the researcher explaining carefully the study and the questionnaire. Next, the self- administered questionnaires were distributed among the participants and retrieved after a week. Lastly, the accomplished questionnaires were then processed, analyzed, presented in tabular forms and interpreted.

The data on the level of depression were derived from the Beck Depression Inventory by summing up all scores in the 21-item test. The scores were interpreted using the following scale: 0-13 for depression at minimal level, 14-19 for depression at mild level, 20-28 depression at moderate level and 29-63 for depression at severe level. Moreover, the quality of the chemotherapy patients' life was determined by calculating the average score of the 22-item test. The average score of 1 would mean worst, 2 for bad, 3 for normal, 4 for better and 5 for best quality of life. Furthermore, the relationship between the two variables was determined by using the Pearson-Product Moment Coefficient analysis.

Before the data collection, the respondents were given informed consents, which indicated the purpose of the study, the potential benefits and harm of the research, ensured their complete anonymity throughout the research and stated that they had the freedom to withdraw from the study anytime. After the distribution of the informed consents, the respondents were asked to sign the informed consent signifying the respondent's voluntary decision to be part of the study. The researcher addressed issues such as confidentiality, anonymity and privacy. Furthermore, the accomplished questionnaires were stored in a safe place and will be shredded or burned after two years.

RESULTS

A total of 102 chemotherapy patients in Eastern Visayas agreed to participate in the study and completed the questionnaire. Table 1 shows the depression level while Table II shows the quality of the chemotherapy patient's life and Table 3 shows the test for significance between the two variables.

DISCUSSION

Table 1 shows the level of depression of the respondents based on the results of Beck Depression Inventory. The result reveals that the majority (52.38%) experienced a mild level of depression. However, there were four respondents with

Table 1. Level of Depression

Level of Depression	f	%
Minimal	43	42.16
Mild	55	52.38
Moderate	4	3.81
Total	102	100

Table 2. Quality of Life

QOL	f	%
Good	99	97.05
Normal	3	2.94
Total	102	100

Table 3. Test of Relationship between Level of Depression and Quality of Life

Paired Variables	*R*	*P-value*	Interpretation
Level of Depression and quality of Life	-0.053	0.000	Significant

moderate depression. Mild depression means that symptoms such as the feelings of sadness, being discouraged about the future, lack of enjoyment in things, guilt, thoughts of committing suicide, worthless, crying, difficulty in concentrating, sleep and eating pattern changes, irritability, fatigue, loss of interest in sex were mildly felt by the respondents.

The results of this present study supported the study of Breitbart et al. (2014) which also revealed that breast cancer patients who underwent chemotherapy treatment reported an overall mild level of depression and individual participants ranged from mild to severe depression. The symptoms of sleeping problems, fatigue, weight loss, and appetite change were the most prevalent symptoms of depression in the study. Likewise, a study conducted among 79 lung cancer patients who underwent chemotherapy treatment showed that the majority (34.2%) of the respondents experienced mild depression (Sah, Sapkota, Adhikari, Singh, & Pokhrel, 2018). Another study conducted among Iranian cancer patients who underwent chemotherapy treatment revealed that the majority reported mild depression (Mashadi, Shakiba, & Zakeri, 2013). However, there were some studies that did not support the result of this present study. A study by Warmenhoven et al. (2011).showed that 10 out of the 46 post-chemotherapy patients with advanced cancer were diagnosed with severe depression Further, Derogatis et al. (2003)also reported that, among the 215 cancer patients admitted at various cancer centers and randomly assessed for the prevalence and severity, it was found that 44% of the respondents had severe depression Hence, all post-chemotherapy patients regardless of the socio-demographic profile and the cancer diagnosis and treatment must be screened for depression.

Quality of Life

Table 2 presents the information on the quality of the chemotherapy patient's life. The majority (97.06%) of the respondents perceived that their quality of life was good while the rest of the respondents have normal quality of life (2.94%). The following are the indicators of a good quality of life, even when experiencing the adverse effects of chemotherapy: still able to accomplish their daily activity; go out without help; take a half hour walk;felt no difficulties in walking even a short distance; able to walk up and down the stairs; bath by themselves; felt well; had good appetite; enjoyed their meals; often experienced vomiting; had lost weight; able to devote themselves to becoming enthusiastic about something; able to deal with stress; can concentrate on something; got encouragement from something or somebody they believed in; worry about their disease; had no problems dealing with people outside their family; thinks that their family was not troubled by their treatment; does not worry about their social life in the future; and does not worry much about financial problems caused by their treatment

The results of the study are congruent to studies previously conducted among breast cancer patients who had chemotherapy treatment. The study revealed that the breast cancer patients undergoing chemotherapy treatment still reported a good quality of life. Another study conducted among 200 patients receiving chemotherapy reported that 29% of the respondents had fear about their future and 26% of the respondents were thinking about the disease and its consequences, yet still reported a good quality of life (Newel, 2009). Another study conducted among cancer patients by Singh and Bala, (2014) revealed that their quality of life was enhanced progressively over six months after the completion of the chemotherapy sessions and they also reported to have good quality of life.

However, there were also studies that deviated from the results of this present study. In a study conducted among breast cancer patients, the results revealed that the majority of the respondents had a bad quality of life, which may be caused by the disruption of daily activities as the result of the toxicity of the therapy (Alzabaidey, 2012). Likewise, a study of 103 young patients with breast carcinoma receiving adjuvant therapy revealed a bad quality of life, especially in the daily activities domain (Arora, Gustafson, Hawkins, McTavish, & Cella, 2001). Hence, based on the studies presented, it can be concluded that the quality of the cancer patient's life can be affected differently and should be assessed, especially after undergoing chemotherapy treatment.

Relationship between Depression level and the Quality of the Chemotherapy Patient's Life

Table 3 reflects that the quality of the chemotherapy patient's life is positively associated with their depression level. In this study, the majority had a minimal level of depression and reported a 'good'

QOL while those who had depression at a mild level reported a 'normal' QOL. The result indicates that those who claimed to have a normal quality of life have a greater tendency to declare 'mild'depression.

Depression is commonly experienced by chemotherapy patients. Being diagnosed with cancer and undergoing chemotherapy treatment is a life-changing event that may result in extensive emotional, physical and social suffering, which may lead to depression. After a series of chemotherapy treatments, there is a high probability of experiencing adverse effects, which may lead the person's quality of life to be at a reduced level (Tierney et al., 1991). Chemotherapy's adverse effects have the possibility to influence the overall wellbeing of the person (Humpel & Iverson, 2007). Studies in Western countries have demonstrated a prevalence rate of 1%-56% of depression among cancer patients after undergoing chemotherapy treatment (Zainal, Nik-Jaafar, Baharudin, Sabki, & Ng, 2013). Moreover, depression significantly impairs functioning in different areas, such as in work functioning, social functioning and health (Mendlowicz & Stein, 2000). Being depressed can reduce physical, emotional, mental and social functioning, which may hamper the person's quality of life (Brenes, 2007). A depressed person will manifest several symptoms, such as loss of pleasure or joy in life, difficulty in concentrating or focusing, feels hopeless, lack of self -esteem, sleeping problems, low energy level, loss of appetite, worthlessness and suicidal thoughts and wishes and, when left untreated, this could lead to altered physical, mental, social and psychological functioning (Keith, Harvey, & Merika, 2007).

Moreover, several studies have reported that the quality of the cancer patient's life depends on the depression level being experienced. A study shows that a 'favorable' quality of the breast cancer patient's life was noted after undergoing chemotherapy for a year. However, they reported a deterioration in body image, sexual interest and functioning after two years. Moreover, a study conducted among prostate cancer patients reported a low to moderate quality of life after treatment and experience of moderate fatigue (Rondorf-Klym & Colling, 2003). Likewise, results also reveal that the quality of life is worst among persons showing severe levels of depression (Seeman et al., 2017). Hence, the literature cited above are congruent with the results of this study.

CONCLUSION

This study revealed that the majority of the chemotherapy patients had mild depression. Moreover, a good level of quality of a chemotherapy patient's life was also reported and showed strong association between the two variables. This implies that patients with cancer and who had undergone chemotherapy treatment in Eastern Visayas have successfully coped with the different adverse effects of chemotherapy treatment that could possibly lead them to depression. However, a few of the respondents were not able to cope with the adverse effects of chemotherapy treatment, particularly those who manifested moderate depression. Therefore, prompt management and treatment are deemed necessary. The researcher recommends the development of a home-care plan for the chemotherapy patients and their families that will serve as a guide in dealing with the management of chemotherapy patients. Therefore, prevalence of depression is prevented, and a favourable quality of life is expected among the chemotherapy patients.

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Original Research

Middle School Students' Perception on a Health Promoting School to Prevent Bullying: A Qualitative Study

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ABSTRACT

Introduction: Bullying at school is an old phenomenon in the adolescent group. Despite massive prevention programs, it has not yet resolved by teachers and schools, and this also can affect school climate aspects. The aim of this study was to explore students' perceptions who are being bullying victims about health promoting schools to prevent bullying at school.

Methods: This study used a qualitative case study design. The research sample was 18 middle school students in grades 8 and 9 in East and West Surabaya. A sample was recruited through snowball sampling. Interview guidelines were used to collect the data through in-depth interviews. The data were subjected to thematic analysis.

Results: Middle school students identified three main requirements related to prevent bullying were health education, health services, and healthy school environment. These themes were found among the participants with a bullying victim's history.

Conclusion: Health education, health services, and healthy school environment are the theme for preventing bullying cases at school. To prevent bullying requires collaboration from various parties, such as students, teachers and school policy makers to be able to apply the rules while in school.

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INTRODUCTION

The role of a health promoting school is still massive and has not yet resolved bullying cases in Indonesia, so that the involvement of the school's role is very important. Bullying at school is still a phenomenon or problem in adolescent groups around the world, although the prevalence varies between countries (Bowes et al., 2019; Låftman, Östberg, & Modin, 2017). Bullying is a form of aggressive behavior designed to hurt other people, which occurs repeatedly or more than once and also causes an imbalance in power so that the victim finds it difficult to protect or defend themselves (Smith, 2016). Various types of bullying that occur in the adolescent group include physical, verbal, social, psychological, and cyberbullying (UNICEF, 2018). There are different types of bullying, namely, indirect or relational bullying (Olweus, Limber, & Breivik, 2019). Bullying has both short-term and long-term effects on students. Bullying on adolescents students found in schools can affect social interactions, such as students feel insecure or unsafe (Jan, 2015). Furthermore, bullying has an impact on decreasing academic performance for victims of bullying at school (Barrington, 2018). Based on these problems, schools and school health organizations need to be involved in efforts to prevent bullying in schools.

In Southeast Asian countries, Indonesians reported higher rates of student bullying than in the Philippines at 20.6% and 13.1%, respectively (Sittichai & Smith, 2015). In 2015, the Indonesian Ministry of Social Affairs reported that 40% of Indonesian students or children experienced cases of planning suicide as a result of bullying that occurred in the 10-14 year age group (Khidhir, 2019; Ruangnapakul, Salam, & Shawkat, 2019). According to East Java Child Protection Agency data, there were 567 children involved as perpetrators and 408 children who were direct victims in 2019, with the highest prevalence in Surabaya and Tulung Agung (Puspita, 2019).

Bullying is the aggressive activity by someone to hurt, to offend or also to push another person, done repeatedly, and aims to show the strength of the perpetrator to the victim (Pontes, Pontes, Ayres, & Lewandowski, 2018). Bullying at school is defined as aggressive behavior that occurs in a school environment that arises in students who are influenced by the power to bully their friends (Shayo & Lawala, 2019). The negative impact of bullying can affect several aspects, including physical and mental health (Murshid, 2017). Bullying can occur to the perpetrator, the victim and the surrounding environment; this will affect their autonomy so that a person will feel dissatisfied with their life, making social relationships unharmonious and decrease the ability to complete tasks (Meriläinen, Kõiv, & Honkanen, 2019).

Previous research describes bullying prevention programs in schools by involving police officers (Devlin, Santos, & Gottfredson, 2018); involving all of the school's components (Acosta et al., 2019); and teaching life skills to students (Fekkes, 2016). In addition, many studies have revealed teachers' perceptions about reporting cases of bullying (Blust, 2016), teachers' perceptions of bullying (Ali, Mobarki, Mohamed, Morsi, & Hamouda, 2020; Hayes, 2017). However, there has been no research on students' perceptions of bullying and health promoting schools as one of the preventions of bullying in schools. Indonesian Health Promoting School, often referred to as UKS is an abbreviation of "*Usaha Kesehatan Sekolah*" in Bahasa. The Minister of Education and Culture said that UKS had been used as the spearhead of health services in schools centered on health education, health services and the development of a healthy school environment (Kementerian Pendidikan dan Kebudayaan, 2012). Accordingly, this study is expected to be able to provide an overview of solutions to prevent bullying in schools through health promoting school activities based on the experiences of victims of bullying at school.

MATERIALS AND METHODS

This qualitative inquiry used a case study approach in order to have in-depth information about the informants. Participants were taken in Surabaya, the second metropolitan city in Indonesia with a fairly high youth coverage, in particular eastern and western Surabaya. Consolidated criteria for reporting qualitative studies (COREQ), a 32-item checklist, was used by researchers to assess and report the results (Tong, Sainsbury, & Craig, 2007). The inclusion criteria specified are bullying victims aged 13-15 who are currently undergoing their middle school studies. Participants have at least involved being victims of bullying in the past one month, either verbal, physical, relational bullying, or cyberbullying.

Recruitment for the sampling study was carried out through a general online assessment of bullying to determine whether participants experienced bullying and through a partnership between school teachers in Surabaya as a liaison between students in schools.

Probable participants were explained about the research, data collection procedures and consent forms by online using Google Forms. Data collection used pseudonyms to identify participants. Potential respondents who agreed were recorded and documented by the researcher. Participants were informed that their participation was voluntary, anonymous, and confidential; also, they could stop at any time. They were also told that the data submitted to researchers would not be disseminated and did not affect student learning outcomes.

Interviews were conducted using a general question guide regarding adolescent personal experiences on bullying at school. This interview also included questions about their opinions or perceptions about the prevention of bullying in schools through school health programs to find out what kind of school environment is ideal for preventing bullying. Researchers used social media to gather data, ranging from video calls or using short message, the variations depending on the willingness of each respondent. Interviews ranged from 45–110 minutes; the length of time during the interview depended on the participants' desire to share their experiences.

Qualitative data from all respondents were recorded and transcribed by the first researcher and continued with the analysis process by all authors. In detail, the first step was to extract the data and ensure its accuracy for analysis. The next stage entailed identifying from the statements and keywords submitted by the respondents related to the general topic of bullying and then identifying and grouping according to the theme. A collection of themes was combined into a more general global theme.

The data collection protocol has been approved by the ethics commission in the health sector at the Faculty of Nursing, Universitas Airlangga, certificate number No.2096-KEPK.

RESULTS

There were 18 participants of age range 13-15 years old. The number of male and female participants was 6 and 12 students, respectively (N = 18, 33% male and 67% female). Most of them have experienced verbal bullying, but not a few have experienced physical bullying as well as cyberbullying. Bullying occurred at school outside of lessons, both among classmates or levels, see Table 1.

Results from the thematic network analyses were grouped into three main themes identified from interviews with students: (1) Health education (2) Health services and (3) Health school environment, see Table 2. In order to better illustrate each theme, direct quotes for students were reported, respectively.

Table 1. Characteristic of Participant (n=18)

Code	Age	Gender	Class	Type of Bullying
P1	14	Female	8	Verbal Bullying
P2	15	Female	9	Verbal Bullying
P3	14	Female	8	Cyberbullying; verbal bullying
P4	13	Male	8	Verbal Bullying
P5	14	Female	9	Verbal Bullying
P6	14	Female	8	Cyber-bullying
P7	14	Female	8	Cyber-bullying
P8	13	Female	8	Verbal Bullying
P9	13	Female	8	Verbal Bullying
P10	13	Male	8	Verbal Bullying; cyberbullying
P11	15	Female	9	Verbal Bullying
P12	13	Female	8	Verbal Bullying
P13	14	Male	8	Physical bullying
P14	13	Male	8	Cyber-bullying
P15	14	Female	8	Verbal Bullying
P16	14	Female	8	Verbal Bullying
P17	13	Male	8	Cyberbullying; Physical Bullying
P18	14	Male	9	Physical Bullying

*P = Participants

Table 2. Theme Distribution of Study

Themes	Sub-Theme	Quotes
Health education	Media	Q1: "In my opinion, health education media is important, this interesting learning will be easy to understand and remember" (P1)
		Q2: "Schools are mostly monotonous, there are only posters, and I am not interested in seeing information on posters. I prefer to look at electronic media" (P3)
	Method	Q3: "It has been done, but not frequently and continuously. Usually through counseling by teachers at certain events" (P4)
		Q4: "The counseling given was good, but my classmates also paid less attention, so they didn't know what bullying was and what the limits were" (P7)
		Q5: "If using drama, it will definitely be more exciting and interesting, each student is able to analyze what happened to the perpetrators and victims of bullying. This will be more catchy and easier to remember" (P13)
	School Program	Q6: "I think the health program only has a youth red cross, helping the teacher when a student fainted during the Monday flag ceremony" (P11)
		Q7: "In my opinion, the program is interesting, so it must be adjusted according to our age, there is an anti-bullying month program or other spiritual programs" (P2)
Health services	Students Service providers	Q8: "I feel embarrassed, so I am more free to tell my own friends, for example, we have a problem" (P10)
		Q9: "I had time to tell my teacher, but when I meet on other occasions I definitely feel insecure, so telling stories with friends seems more comfortable" (P8)
	Teachers Service providers	Q10: "The most influential in giving advice and motivation is my teacher" (P10)
		Q11: "I feel safer, more comfortable, more relieved when I talk to my teacher, because the information is protected" (P15)
		Q12: "Teachers do not favoritism, so we are comfortable telling stories" (P6)
		Q13: "I think that, what my teacher conveyed must be appropriate, and the information must be correct" (P2)
	Screening	Q14: "In that school there is no mental health screening, usually physical health measures weight, is there any congenital disease, for example asthma, etc., but there is no bullying screening" (P2)
		Q15: "Actually, we better know from the beginning whether we are classified as the bully or not" (P14)
		Q16: "Maybe it could be during the student orientation period, that we checked one by one whether it was included in the bullying category, then we explained the information about bullying" (P17)

Themes	Sub-Theme	Quotes
Healthy school environment	Lack of school environment	Q17: "Sometimes there are schools with empty hallways, usually it was being high risk of becoming a place of bullying" (P18)
		Q18: "In schools there should be CCTV, to monitor student activities, it can be placed in the classroom or in a strategic place" (P10)
		Q19: "Supervision from the school should be even stronger, so students feel safe while at school" (P5)
	Health promotion competition	Q20: "Which is often contested is a class cleanliness competition, even though class cleanliness is just like that. When it comes to bullying, there should be an anti-bullying ambassador contest" (P9)
		Q21: "Other health promotions include competitions, poetry competitions or songs about bullying" (P3)
		Q22: "Yes, it was very important. In my opinion, making slogans or slogans catchier and easier to remember" (P16)
	School policy	Q23: "Yes there must be, the rules in my school are mostly about discipline, for example punishment for students who are late, do not do homework, fight" (P4)
		Q24: "If the rules for physical bullying such as fighting at school already exist, but if you make fun of it, it doesn't exist" (P13)
		Q25: "If no one reports it, the teacher sometimes doesn't know, so you have to remind and report any bullying at school" (P8)
		Q26: "In essence, the existing rules must be strengthened again, tightened again, because children in this era are very easy to violate" (P11)

Theme 1: Health Education

Health education is the most important thing in handling bullying cases, according to the problem, many people did not know about the boundaries that lead to bullying to students. The participants said that health education can increase their knowledge. This theme can be identified from the sub-themes of health promotion media, health promotion methods and school program. Health promotion media must be adjusted to the age target and would be more attractive if it was based on electronics (quotes 1-2). Health promotion method or health counseling with lectures seems less effective; at their age they prefer attractive education and all participants should be involve to participate in the promotion (quotes 3-5). Another interesting thing is the school program; school programs related to health must be more creative and make activities that involve all students so that they can train cohesiveness and togetherness between students (quotes 6-7).

Theme 2: Health Services

This health service theme shows more about the role of teachers and students in school when handling bullying cases. Both of them show that they are interrelated and have an influence in preventing adolescents bullying in school. By the guidance of counseling or discussion booths, some students stated that they were more comfortable telling stories with the teacher because they felt it was easy to find solutions and information was protected (quotes 10-13) and some of them were more comfortable telling stories with their own friends because they could tell honestly without feeling embarrassed between students (quotes 8-9). Screening or assessment at the beginning is also an important value for students because it is able to detect early whether the individual is at low, medium or high risk of becoming a victim or perpetrator of bullying (quotes 14-16).

Theme 3: Healthy School Environment

A healthy school environment is also an indicator in improving the students' health status in schools. Based on the results of the interviews, there are three main topics that affect the handling of bullying cases in schools, including the unsuitable school environment, competition for health education activities and school policies. These three aspects are considered capable of supporting bullying prevention programs in schools. The school environment they want is a safe, comfortable and conducive one, supported by direct monitoring from the school and optimizing development facilities (quotes 17-19). To support activities at school, participants said that health promotion about bullying needs to be intensified with a competition method that involves all students to train together (quotes 20-22). The policies or regulations established by each school already have standards in the prevention of juvenile delinquency, but need to be improved and tightened (quotes 23-26).

DISCUSSION

Research on bullying prevention carried out in schools has been extensively documented; however, a deeper understanding of the trajectories and experiences across students about a development plan of bullying prevention-based health promoting school remains underexplored. This study aimed to generate insights on the students' perceptions and the development of a health promoting school in preventing bullying in schools using multi-informants, in-depth, and a qualitative approach by students. Information based on the support desired by students in preventing cases of bullying in schools includes health education, health services and healthy school environment.

The results showed that media information, delivery information methods and school activities had a clear relationship to increase knowledge about bullying. Recent study shows that, media information can significantly increase knowledge, so they are able to report bullying incidents through the student empathy approach (Chaux, Velásquez, Schultze-Krumbholz, & Scheithauer, 2016). This mediation of empathy is in line with the findings that empathy therapy is able to reduce bullying behavior in the 11-12 year age group (Fatimatuzzahro & Suseno, 2017).

The results showed that classmates and teachers have an important role in preventing bullying cases. One of the important aspects in the school environment was the teacher's role, where teachers who have a broader knowledge of the bullying phenomenon will be more effective in managing problems, and they have a more supportive attitude toward the victims (De Luca, Nocentini, & Menesini, 2019; Lester, Waters, Pearce, Spears, & Falconer, 2018). For instance, students indicated the support that should be given to victims of bullying and other students regardless of blood relations or closeness between schools. On the other hand, teachers have an important role to play in creating an effective learning environment; this can help students develop and control emotions and cognition in an adaptive way (Black & Allen, 2018). Indirect effects of teacher emotional support on students' engagement and motivation indicated significant mediating effects of autonomy (Ruzek et al., 2016).

Screening specifically for high-risk groups can assist the intervention process. A recent study shows that screening of risk behaviors significantly affects detecting risky behavior and identifying the need for intervention (Kaess et al., 2014). In addition, screening helps prevent the development of adverse attitudes that are more severe and difficult to control (O'Connor et al., 2018). Another advantage of detection is that it guarantees that judgment is conveyed on the basis of the detection of preclinical status and clinical residual (Seltzer, Menoch, & Chen, 2017).

Regarding the problem of implementing a health promoting school, students described the importance of creating a healthy and safe school environment; this can be realized through the application of regulations in schools. A handful of countries also have bullying prevention programs, and these can be integrated into health education standards, and / or teacher professional development (Department of Health and Human Services, 2018). In some cases, the term distinction is important because it will lead to different perceptions and meanings; the definition of bullying usually includes an imbalance of power as an element, while laws on harassment do not necessarily require such (Cornell & Limber, 2015). Schools have a legal responsibility to maintain a safe environment that allows children and youth to continue their education and other services or opportunities available at the school, and minimize the incidence of bullying (National Academies of Sciences, Engineering, 2016).

CONCLUSION

This study seeks to identify students' needs for teacher social support and to include individual perspectives on bullying prevention in schools through a health school promoting approach. To our knowledge, this study is the only one that involves many students in researching bullying prevention from a student perspective. Media and method to deliver information about bullying is a necessary part of bullying prevention. Screening and type of social support, such as emotional support, rewarding and information, have an important role in preventing bullying in schools, from both teachers and students' perspectives. In addition, strengthening can be done by establishing a safe and comfortable school environment through the implementation of school regulations, so that it is hoped that the number of bullying incidents in schools can be reduced.

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Original Research

Implementation of Chest Compression for Cardiac Arrest Patient in Indonesia: True or False

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ABSTRACT

Introduction: The highest cause of death is cardiac arrest. Proper manual chest compression will increase survival of cardiac arrest. The aim of this study was to know the implementation of chest compressions for cardiac arrest patient in Indonesia.

Methods: This study used a descriptive quantitative design. The samples were nurse and code blue team when performing manual chest compression to 74 patients experiencing cardiac arrest. The sample have body Mass Index (BMI) more than 20. Research was conducted in two hospitals in Java, Indonesia. Implementation of chest compression is measured based on depth accuracy. Depth accuracy of chest compressions was assessed based on the comparison of the number of R waves with a height >10 mV on the bedside monitor with the number of chest compressions performed. The data were analyzed descriptively (mean, median, mode, standard deviation, and variances).

Results: The mean of accuracy of compression depth is 75.97%. The result shows accuracy of compression depth on manual chest compression still under the American Heart Association (AHA) recommendation of 80%, because chest compression rate are not standardized. Chest compression rates are between 100-160 rates/minute, while AHA's recommendations are 100-120 rates/minute. High compression speed causes a decrease in accuracy of chest compressions depth.

Conclusion: The implementation of chest compressions in Indonesia if measured based on accuracy of compression depth is not effective. Nurses and the code blue team have to practice considering the use of cardiac resuscitation aids.

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accuracy of compression depth; cardiac arrest; chest compression

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INTRODUCTION

Cardiac arrest (CA) is an emergency condition with a high mortality rate, and patient survivors are low (Perkins et al., 2015). The mortality rate of patients due to CA is high. Perkins et al. (2015) and Grunau et al. (2016) reported more than 90% of CA patients in the UK and North America dying. The incidence of cardiac arrest in Indonesia is unknown. The biggest cause of CA is cardiovascular disease (70%), so if there are more than 5 million people with cardiovascular disease in Indonesia, CA sufferers in Indonesia are quite high (Darmawan, Sujianto, & ROchana, 2018).

The external factor affecting CA survivor is the quality of resuscitation (AHA, 2015). The American Heart Association (AHA) (2015) recommends CPR done at a speed of 100 to 120 compression rates per minute. Rescuer must push chest wall with the depth of 5 to 6 cm. Rescuer must allow full chest wall recoil, and to minimize interruptions (AHA, 2015). Rescuer in hospital often do not to do high quality CPRs, especially related to compression rates and depths (Coy & Schultz, 2015; Hasegawa, Daikoku, Saito, & Saito, 2014; Idris et al., 2012; Monsieurs et al., 2012; Ruiz de Gauna, González-Otero, Ruiz, & Russell, 2016). Appropriate chest compression speed, will provide the perfect depth of chest compressions (Monsieurs et al., 2012).

The chest compression rate affects the depth of chest compression. Monsieurs et al. (2012) concluded that chest compressions were high, resulting in low chest compressive depth. On the other hand, chest compression rate in Indonesia is not standardized (Monsieurs et al., 2012). Darmawan and Oktavianus (2013) reported that the rhythm of rule of five or two syllables has an average chest compression velocity of 125.7 x / min and the depth of chest compression that reaches 5 cm is 39.05%, while the rhythm of the rule of ten or one syllable produces chest compression speed 157 x / min, with a chest compression depth that reaches 5 cm which is 39.27%.

Unstandardized rhythm can decrease accuracy of compression depth (Gauna et al., 2016). Although the nurses and the code blue team have experience in performing chest compressions, in reality the rate of chest compressions taken by the AHA has not been implemented properly. Therefore, it is necessary to study how is the implementation of chest compressions in Indonesia, so that the most effective method of chest compressions can be developed effectively in the future. The aim of this study was to know the implementation of chest compressions for cardiac arrest patient in Indonesia, especially the accuracy of compression depth.

MATERIALS AND METHODS

This study used a descriptive quantitative design. The researcher determined the number of samples using previous study methods that are sourced from Idris et al.'s (2012) research. Calculation results obtained 74 cardiac arrest patients. The researcher also selected rescuer as respondents using purposive sampling techniques.

The researcher recruited enumerators, and taught them how to calculate the depth of chest compressions. When chest compressions are performed, the screen image of bedside monitor will show R waves. The researchers and enumerator recorded the number of R waves with the height more than 10 mV and the number of chest compressions (using hand counters). Then, the number of R waves with the height more than 10 mV were divided with the number of chest compressions done to determine accuracy of chest compressions.

Data were analyzed by finding descriptive data, such as averages of accuracy of chest compressions, and other data, such as median, mode, standard deviation, and variances, using SPSS 25.

The researcher established inclusion criteria as chest compressions on a solid surface, patients have heart electrical records using bedside monitor, CPR was done by medical personnel who have certified emergency training. Rescuer must have weight more than 20 of body mass index (BMI). Exclusion criteria were patients marked with do-not-resuscitate. The researcher obtained ethical clearance from The Health Research Ethics Committee of Faculty of Medicine, University of Diponegoro (Number :176 / EC / FK-RSDK / IV / 2017). The research was conducted in two hospitals in Java, Indonesia, by asking permission from the director of the hospital. The researcher asked permission from the patient's family with giving informed consent. Researchers and enumerators w waited for a patient to experience cardiac arrest, with a sign of a code blue call.

RESULTS

Research results obtained74 patients having cardiac arrest that were given cardiopulmonary resuscitation with complete data, and according to the criteria. The characteristics of people who performed chest compressions are shown in Table 1.

Characteristics of rescuers, as presented in Table 1, show most respondents have experience more than 10 years in doing chest compressions (79.8%). The mean of body mass index of respondents is 23.436, with an intermediate range 21-26.4. All respondents are certified in emergency training. Accuracy of chest compression can be seen in Figure 1.

Based on Figure 1, the accuracy of chest compressions is 29-96%, and the average accuracy of chest compressions is 75.97%. The result of the variance test showed the number 226,769. These data show a high variation among chest compressions. When viewed from the standard deviation of 15.059, it means that the range of variation in chest compression accuracy is quite wide. The median value shows 80.00, while the mode value shows the number 81. This condition indicates that most of the implementation of chest compressions is good and above the standard of AHA. On the other hand, some rescuers did not successfully achieve proper chest compressions accuracy.

DISCUSSION

The implementation of chest compressions for cardiac arrest patient in Indonesia has not been done optimally. This condition is shown from the data that accuracy of chest compressions is 75.97%. The mean of accuracy of compression depth needs to be improved. There is absence of a speed regulator to arrange compression rates making for faster of chest compression rates. Chest compression rates in this study show a range 120-160 beat/minute. Chest compression rates more than 120 beat/minutes cause fatigue in the helper, which, in turn, causes a decrease in strength of compressions, so that the accuracy of compression decrease (Chung et al., 2012).

Chest compressions rate can affect compression depth. Monsieurs et al. (2012) explain that the higher chest compressions rate affects decreased concentration, so that the rescuer cannot control the speed and depth of chest compressions. If we look at the data, mean of accuracy of chest compressions is 75.97%. This mean is below AHA recommendation,

Table 1. Distribution of Characteristics' Respondents (n=74)

Variable (s)	f	%	Mean (SD)	Min-Max
Long been a code blue team				
2-5 years	2	2.7		
5-10 years	13	17.5		
> 10 years	59	79.8		
Body mass index			23.436 (1.491)	21.00-26.4
Have an emergency training certificate	74	100		

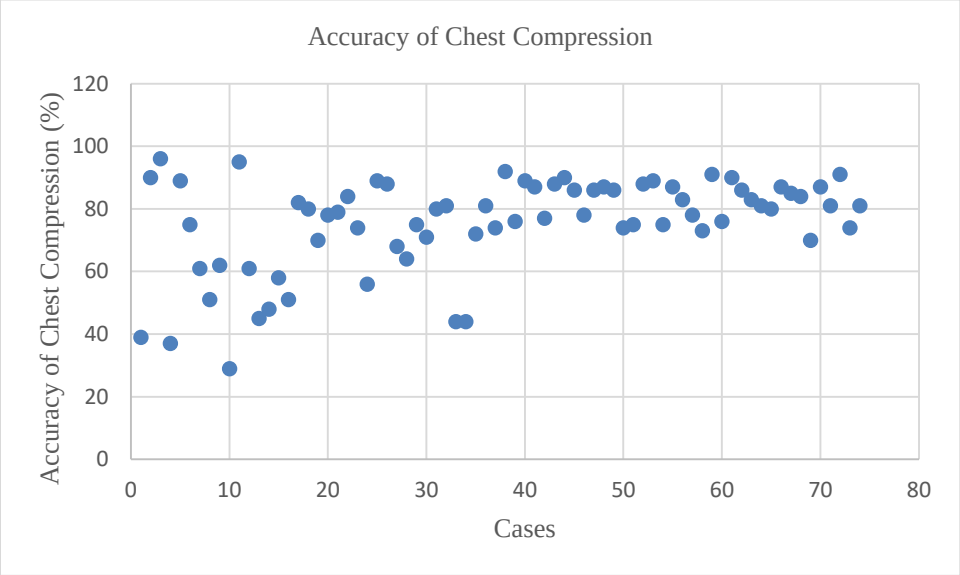

Figure 1. Accuracy of Chest Compression

which is 80%. There needs to be an effort to improve accuracy of chest compressions.

Besides compression rates, weight rescuer factor can also be decisive of compression depth. The heavier rescue makes impact easier to get ideal compressions depth. AHA explains that the high position of the bed will affect the accuracy of chest compressions (Gauna et al., 2016). Ideally the position of the bed is adjusted to the height of the helper. Jantti, Silfvast, Turpeinen, Kiviniemi, and Uusaro, (2009) explain the surface under the patient must be firm, because it is a counter of pressure exerted on the patient's chest.

The accuracy of chest compressions has an impact to return of spontaneous circulation (ROSC) and survival with good neurological function. Accuracy of chest compressions is determined by chest compression rates, weight of rescuer, surface under the patients, as well as the number and duration of disturbances in compression (Grunau et al., 2016). Sometimes, we must stop compressions due to attaching intubation, or other tools. In most studies, chest compressions rate with 100-120 beats per minute is associated with an increased survival rate, and lower than 100 beats per minute is associated with a decreased survival rate. The rescuer should begin to adjust the compression rate and minimize distraction during compression (AHA, 2015).

During CPR, the rescuer must provide effective compression at speeds of 100 to 120x / minute, accuracy of chest compression higher than 80%, and the appropriate depth, minimizing the number and duration of disturbances in chest compressions. Additional components of high-quality CPR include allowing full chest recoil after each compression and preventing excessive ventilation (Graham et al., 2015). Accuracy of chest compression must be increased to improve survival of cardiac arrest.

Other than compression rates, the weight of the rescuer is an important factor in the compression depth (Hasegawa et al., 2014). Respondents of this study have body mass index mean 23.436, with an intermediate range 21-16.4. It is ideal body for a rescuer to perform chest compressions. Jäntti et al. (2009) find that bed height affects maximal compression forces, and affects accuracy of compression depth. Dellimore and Scheffer (2012) showed the surface under the patient may affect the cardiopulmonary resuscitation (CPR) quality. The limitation of this study is that there is not a large number of samples. In addition, researchers do not limit body weight in cardiac arrest patients, because body weight will affect the amount of pressure required for chest compressions.

Another factor affecting the accuracy of chest compression depth is the training gained. This study shows that all executor chest compressions are certified, but, when viewed from variations in the accuracy of chest compressions is 29-96%, then there is an abnormality. Körber, Köhler, Weiss, Pfister, and Michels, (2016) reported differences in the quality of chest compressions between students and experienced medical personnel. It can be concluded that, when the reservoir is homogeneous, the

accuracy should be the same. The researcher is of the opinion that this occurs because there is no continuous renewal of science, so it is possible to forget the principles of chest compressions.

CONCLUSION

The implementation of chest compressions for cardiac arrest patient in Indonesia, based on accuracy of compression depth is lower than standard. Helpers of cardiac arrest must control chest compression rate to improve accuracy of compression depth. Future research can increase the number of samples and homogenize the type of ward.

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Original Research

A Correlation between Working Environment and Job Experience Toward Culture Shock among Indonesian Nurses in Japan

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ABSTRACT

Introduction: Indonesian nurses living and working in Japan with a culture likely to be very different from their own may be additional sources of culture shock, feeling confusion and discomfort when living in a new country. They also experience difficulties in maladaptive adjustments to the new environment to overcome culture shock, then they get stressed in a working environment which can decrease work motivation and quality of performance.

Methods: This study used a cross-sectional approach with a non-probability sampling method. The sample is 90 Indonesian nurses having been working in Japanese hospitals, both those passing the National Board Examination (NBE) and those not. Working environment (job satisfaction, colleague, rule of employment) and job experience were independent variables and culture shock was dependent variable. Work environment research instruments were from the revised questionnaire modification Scale of Socio-Cultural Adaptation (SCAS-R), the substance of work performance, job experience questionnaire and the Culture Shock Questionnaire (CSQ). Data analysis used Spearman-rho and multiple logistic regression statistical tests.

Results: The average of respondents who did not experience culture shock or normal was 44 (49%) and respondents who experienced culture shock were a poor level of 36 (40%) and moderate level of 10 (11%). Job satisfaction (p value = 0.001) and colleague (p value = 0.001) have a significant correlation with culture shock. Rule of employment (p value = 0.174) and job experience (p value = 0.209) were not significant with culture shock. Multiple logistic regression analysis was conducted to figure out the predictors that influence the change in culture shock status while a colleague ($\beta = 2.445$, p value < 0.001).

Conclusion: The results of the research showed that colleagues in the work environment had a significant influence effect on cultural shock. Therefore, it is necessary to provide social support to adaptive adjustment and stress management to Indonesian nurses in Japan so that they can impact increased quality performance.

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INTRODUCTION

The situation of many nursing institutions established in Indonesia that produce nurses on a large scale is not comparable to limited equal distribution of job opportunities in Indonesia, which is a professional challenge in Indonesia (Kurniati, Efendi, & Yeh, 2014). The chances of fresh nursing graduates in Indonesia being absorbed in the domestic job market are low (Arisanova & Satyawan, 2017). There has been a growing demand for nurses in the global labor market of the healthcare workforce (Efendi, Chen, Kurniati, & Yusuf, 2018). Therefore the health professionals migration from low-wage countries to high-wage countries can increase

economic efficiency (Roesfitawati, 2018). Since 2006, the institution of Intensive Preparatory Course for Indonesian Nurses (KIPPI) through placement mechanism for nurses to work abroad has been carried out Government to Private (G to P) or private to private (P to P) to Saudi Arabia, Kuwait, Qatar, United Arab Emirates (UAE), the United States of America, Australia, Taiwan, Hong Kong and Japan (BNP2TKI, 2018).

Japan is a society with a declining birth rate and aging population. The percentage of elderly is predicted to reach 32% by 2030, and 41% in 2055 (Ohno, 2012). The Japanese government has opened its market to healthcare human resources needs to accept more foreign nurse and care workers under the Economic Partnership Agreement (EPA) program and foreign nurses began to enter Japan in 2008 from Indonesia and the Philippines, and Vietnam in 2014 (Hatanaka & Tanaka, 2016). Then Indonesian nurses migrated to work in Japan with Government to Government (G to G) placement mechanism under the Indonesia Japan Economic Partnership Agreement (IJEPA) which was facilitated by the cooperation of the labor agency of the National Agency for Placement and Protection of Indonesian Workers (BNP2TKI) since November 4, 2019, changing its name to the Indonesian Migrant Workers Protection Agency (BP2MI) and Japan International Corporation of Welfare Services (JICWEL) (BP2MI, 2020). The nurses who migrate to Japan under the EPA program are designated as candidates (assistants) until they pass the NBE conducted in the Japanese language (Efendi, Chen, Nursalam, Indarwati, & Ulfiana, 2016). Under the IJEPA, they were a fluctuating total, with the number of nurses reported 29 (FY 2017), 45 (FY 2018), and 31 (FY 2019). And the number of care workers showed 295 (FY 2017), 602 (FY 2018), and 304 (FY 2019) (JICWELS, 2019). However, their national exam pass rate has remained much lower than the rate for all examinees; 21% for nurses (FY 2017), and 22% for care workers (FY 2017) (BNP2TKI, 2018).

The migration process is a social change whereby an individual moves from one cultural setting to another for the purpose of settling either permanently or for a prolonged period (Hariyadi, 2013). Migration to a new environment can negatively affect, including mental well-being confusion; living in a new country with a different socio-culture and living and working environment can trigger a culture shock condition (Doki, Sasahara, & Matsuzaki, 2018). The cultural work environment is different, including communication relationships with colleagues, satisfaction, rule of employment and problems of daily life with the family, economy and social inequality (Doki et al., 2018). One report indicated that there were mental problems among 22.5% Indonesian nurses and care workers who came to Japan under the EPA program. Some mental problems have been caused by routine stress in a working environment to do manual tasks accompanied by a certain sense of responsibility and tension particular to medical and nursing care workplaces, which has an impact on job satisfaction issues and relationships between colleagues (Sato & Kamide, 2016).

In addition, the survey results revealed that the burden of passing the national board examination is a significant stressor faced by Indonesian nurse candidates in Japan (Hatanaka& Tanaka, 2016). The nurse candidates under the EPA feel low self-esteem when Indonesian nurses who have job experience in the medical field but, when working in Japan, cannot pass the NBE for a position as a candidate (nurse assistant) to do basic human needs action, which is prone to medical action deskilling (Nugraha, Sumihisa, & Hirano, 2017). Based on the EPA program, nurse candidates passing the national examination change from supplementary work as a candidate to a professional job as qualified healthcare personnel causes a cultural shock of the working environment. It is inferred that there is a negative impact on their mental health with Indonesian nurses who passed the NBE there is a higher cultural shock of the work environment, poorly adapting to have to do more duty and have greater responsibility than before (Nugraha & Ohara-Hirano, 2016).

The health professionals migration has been linked to culture shock in Japan in that differences of cultures, including lifestyle, language, and climate, may be an additional source of fatigue, mental stress and physical efforts to extreme culture shock in the new workplace (Fumiko, 2019). Social adjustment during the process of migration is linked to mental stress illness, which may be influenced by the new working environment as well as socio-cultural adaptation acceptance by the host community adaptively to avoid stress, Bit if it is maladaptive, it can trigger stress while living in Japan, which may reduce the net benefits of migration (Hatanaka & Tanaka, 2016; Nugraha & Ohara-Hirano, 2018). Mental and physical stress in the work environment have a negative impact on motivation, performance, and productivity, which can be one of the causes of low-quality human resource competitiveness (Soegoto & Narimawati, 2017). The objectives of this study are to clarify Indonesian nurses who migrate to work in Japan to a cross-cultural adaptation process experiencing culture shock in the work environment and job experience. Indonesians in Japan may enhance a mutual understanding between Indonesian and Japanese nurses, leading to better utilization of human resource.

MATERIALS AND METHODS

This study was conducted in a cross-sectional design. The population was 90 Indonesian nurses EPA who arrived more than one year to work in a hospital in Japan, both those who passed the NBE and who did not. Total sampling was used to recruit the participants. The explanation of the terms and conditions of the study was given and informed consent for study participation was obtained. All

respondents were assured of the voluntary and confidential nature of the study. A total of 28 questionnaires items were distributed online during August to September 2020. The questionnaire was set up with a default one response per respondent to avoid any duplicate responses. The BP2MI has given notification of the complete a questionnaire was automatically sent to the respondent's email or private message address.

This study has used five questionnaires validated and translated in Indonesian and distributed online, including the Culture Shock Questionnaire (CSQ) which assessed the culture shock condition selected as dependent variable in this study. It measures a participant's current culture shock and consists of 12 items by focusing on two major areas: the core culture shock items component and the interpersonal stress items. The answer choices of the CSQ in this study used a Likert-type scale poor, average, good (Mumford, 2000). The Indonesian-language version of the CSQ has been tested for reliability and validity, has Cronbach's alpha of 0.906 with a sensitivity ranged from 0.461 to 0.869.

The working environment questionnaire and job experience questionnaire were selected as independent variables in this study. It measures a participant's current working environment and consists of 12 items focusing on three major areas: job satisfaction, colleagues and the rule of employment items. The revised sociocultural adaptation Scale (SCAS-R) of rule of employment questionnaire consists of four items and was used to determine the level of the job satisfaction questionnaire (Wilson, 2013). The researcher developed a questionnaire consisting of eight items from that developed by Robbins and Judge (Rino, Yuniarsih., & Suwatno, 2019), and rule of employment (Kemenaker RI, 2003). The working environment questionnaire has been tested for reliability and validity, with Cronbach's alpha of 0.760, with a sensitivity ranged from 0.450 to 0.829. It measures a participant's current job experience and the questionnaire consists of four items developed by Foster. The job experience questionnaire has been tested for reliability and validity, with Cronbach's alpha of 0.632 and sensitivity ranged from 0.523 to 0.807. The answer choices of the working environment questionnaire and job experience questionnaire in this study used a Likert-type scale of poor, average, good. The analysis of the research used univariate analysis (frequency distribution), bivariate analysis (Spearman-rho), and multivariate analysis (multiple logistic regression statistical test).

Ethical clearance approval number 141 / EC / KEPK-S2 / 07 / 2020 was sought from the Health Research Ethics Commission of the Faculty of Medicine, Universitas Brawijaya. The ethical requirements and respondent rights have been fulfilled throughout the research process to collect the data online in Google Form link and did not cause harm or disturb.

RESULTS

Table 1 shows the distribution of the sociodemographic characteristic of the study participants. The average age of study participants was 28 – 32-year-olds, 63(70%) of the subjects were female, single status was 56 (62%), Islam religion was 57 (63%), nurses having job experience of domestic

Table 1. Characteristics of respondents (n=90)

Characteristic	n	%
Age		
23-27 years old	33	37
28-32 years old	48	53
33-37 years old	9	10
Gender		
Female	63	70
Male	27	30
Religion		
Islam	57	63
Protestant	20	22
Catholic	4	5
Hindu	9	10
Status		
Single	56	62
Married	30	33
Widower/ widow	4	5
Place of job experience		
Indonesia	83	92
Arab	1	1
Taiwan	5	6
Korea	1	1
Duration to stay in Japan		
1-2 years	57	63
3-4 years	31	35
≥5 years	2	2
Passed NBE		
No	76	84
Yes	14	16
Nursing Education		
Associate's degree	42	47
Bachelor	48	53
Culture shock		
Normal	44	49
Low	36	40
Moderate	10	11

Table 2. Respondents' working environment (job satisfaction, colleague, rule of employment) and job experience (n=90)

Variable independent	n	%
Job satisfaction		
Poor	15	17
Moderate	52	57
Good	23	26
Colleague		
Poor	6	7
Moderate	55	61
Good	29	32
Rule of employment		
Poor	11	12
Moderate	49	55
Good	30	33
Job experience		
Poor	19	21
Moderate	50	56
Good	21	23

Table 3. Correlation between Working Environment (Job Satisfaction, Colleague, Rule of Employment) and Culture Shock (n = 90)

Working environment	*Culture shock*						Total		p-value	r
	Normal		Low		Moderate					
	n	%	n	%	n	%		%		
Job satisfaction							.			
Poor	3	4	7	8	5	6	15	18	0.001	0.346**
Moderate	24	25	20	22	8	9	52	56		
Good	17	19	4	4	2	3	23	26		
Colleague										
Poor	0	0	0	0	6	7	6	7	0.000	0.512**
Moderate	21	23	26	29	8	9	55	61		
Good	23	25	5	6	1	1	29	32		
Rule of employment										
Poor	5	6	2	2	4	4	11	12	0.174	
Moderate	22	24	19	22	8	9	49	55		
Good	17	18	10	11	3	4	30	33		

Table 4. Correlation between job experience and culture shock (n=90)

Job experience	*Culture shock*						Total		p-value
	Normal		Low		Moderate				
	n	%	n	%	n	%	n	%	
Poor	7	8	9	10	3	3	19	21	0.209
Moderate	25	27	20	22	5	6	50	55	
Good	12	13	7	8	2	3	21	24	

Table 5. Multivariate logistic regression working environment toward culture shock among Indonesian nurses in Japan

Variable	B	SE	Wald	p-value	Exp(B)	OR(95%CI)
Job satisfaction	0.466	0.771	0.365	0.546	1.594	0.351-7.228
Colleague	2.445	0.700	12.207	0.000	11.534	2.926-45.471
Constant	-5.265	1.193	19.469	0.000	0.005	

hospitals in Indonesia were 83 (92%), living in Japan 1 - 2 years were 57 (63%), nurses not passed NBE 76 (84%). For the level of education, 48 (53%) were classified as S1 (bachelor of nursing). The distribution of mental health of the average of respondents did not have culture shock or were normal 44 (49%).

Table 2 presents the mean of predictor variables, culture shock, working environment and job experience of the study participants, that the average respondents of culture shock were caused by a working environment with moderate levels of job satisfaction were 52 (57%), the relationship of colleagues at moderate level were 55 (61%), moderate level of employment rule was 49 (55%). The average of job experience at moderate level were 50 respondents (56%).

Table 3 presents the mean difference of predictor variables between working environment (job satisfaction, colleague, rules of employment) and job experience toward culture shock. It shows a significant correlation between job satisfaction and colleague with culture shock with a p value 0.001 (r = 0.346 **) and 0.000 (r = 0.512 **) that indicate a positive direction with moderate relationship strength between variables. This showed that the more nurses had moderate job satisfaction relationship, the lower the culture shock level in nurses. The results of further analysis related to culture shock level and job satisfaction in nurses showed that nurses who had a culture shock level in the normal category had the moderate category of job satisfaction nurses (25%). Then it showed that the greater the relationship between the moderate category of colleague nurses was, the lower the culture shock level in the nurses. The results of further analysis related to culture shock level and the relation colleague in nurses showed that nurses who had a low level of culture shock had moderate category of colleague relation (29%). The rule of employment and job experience did not show significant correlation with culture shock with p values of 0.174 (Table 3) and 0.209 (Table 4). The job satisfaction and colleagues variables showing significant correlation with culture shock variables were combined to develop a model that predicted culture shock change using a multiple logistic regression analysis. Based on Table 5, the prediction model was conducted and showed the colleagues' relationship toward a working environment of

culture shock with statistical significance (p = 0.000) and the highest odds ratio value was OR = 12.207.

DISCUSSION

The implementation of This study identified the average nurse did not experience culture shock (normal), and migration adapting to individual duration time contact with host culture stays to improve cross-cultural tolerance competency can reduce stressor precipitation (Doki et al., 2018; Stuart, 2016). Healthcare migrant workers under IJEPA who either passed the national exam or did not experienced reasonable difficulties due to the long duration of time of more than one year in Japan, which allowed to be able to study actual competency sociocultural adaptation (Nugraha & Ohara-Hirano, 2018). Sociocultural adjustment affects immigrants' native culture contact with host culture stays in long periods which is associated with increasing psychological adjustment, which can be enhancement of social support contact quality for cross-cultural communication to better understand each other (Hatanaka & Tanaka, 2016). In addition, Tanaka et al. (2016) reported results of a comparative study on the cross-cultural tolerance between Indonesian immigrants (travelers, students, internship, health workers) who come to Japan, and found that the health professional workers, such as nurses and caregivers under IJEPA, have the highest ability to tolerate cross-cultural to adapt to culture shock. So that they have acculturation to living in Japan because cross-cultural tolerance skills have been related as relevant by graduating from a nursing college or vocational school background with health services job experience history, and they have received Japanese culture and language training. Cultural tolerance process to acculturation is the process by which migrants to a new culture develop relationships with the host culture and maintain immigrant native culture (Hariyadi, 2013).

The current study found the IJEPA nurse average status of the moderate working environment (job satisfaction, colleague, employment rule) and job experience history did too. The meaning of moderate level means that something has been obtained to meet a need or satisfy a desire, in the working environment (Liu et al., 2019). The work environment is everything around the workers that can influence them in carrying out their assigned duties (Nurhayati, 2016). There are components of the non-physical work environment related to work psychology, including job satisfaction, colleague, employment rule, and job experience (Liu et al., 2019). Healthcare workers suffering psychological problems from overseas triggered culture shock caused by cultural differences between host culture and immigrant native culture and can have an effect on emotional psychological responses to social behavior for adjustment in a new working environment (Ristianti, 2018).

In recent times, many professional people who have travelled abroad experience culture shock which is the discomfort a person feels when they are placed in an unfamiliar work environment (Doki, et al., 2018). The culture shock relates to work environment stress, such as ambiguous role problems and excessive workload, resulting in fatigue causing job dissatisfaction, as well as high workloads with low work control influenced by colleague relationships which have an impact on decreasing motivation so that it can cause decreased performance (Hongfei et al., 2016). These daily stresses may have an impact on mental health of nurse candidates under the EPA who have three years to pass the national board examination or they have to return to their home country (Ishikawa & Setyowati, 2018). In addition Sato (2019) reported that quite a few candidates gave up and returned to their home countries. Moreover, 20% of the health professionals on the EPA program who passed the national qualification returned to their home countries after obtaining national certification. The major reasons for their repatriation were personal ones, such as care for aged parents or marriage as well as frustration adjusting to a working environment that requires a strict commitment to rules and long working hours.

Job satisfaction was identified as a significant predictor that influences the change in culture shock. Job satisfaction is an emotional expression that is positive or pleasant as a result of an assessment of a job or job experience (Coldquitt, 2015). The economic conditions in the pre-emigration period exhibit a relationship to change the culture shock condition tendency toward job satisfaction so as to enjoy the results of working wages. Which the worker lower economic is more culture shock than better economic conditions. After migration among those living with lower economic conditions in the pre-migration period, they are possibly burdened with the condition of their family left behind. They express responsibility to their family by sending their revenue to support their family economically as well as these migrants spend their income on their daily living costs, while those who have better economic conditions can spend their revenue more freely and enjoy their life in Japan (Nugraha et al., 2017).

In addition, conflicts have amplified the nurses coming to Japan to feel cultural shock because the work environment is not like in Indonesia so that job satisfaction cannot be achieved. There are four patterns of job satisfaction related to culture shock in different working environments occurring within the nurse migrants under the EPA system. First, a pattern of involves nurses who come to Japan and experience culture shock with a high work ethic such as a discipline of a way of life of the Japanese work environment, as follows: there were too many workplace rules, the work was hard, and the demand for punctuality was excessive. They have different day off schedules and the shift in Japan is a working environment that requires a strict commitment to rules and long working hours (Yoko &Setyowati,

2018). The shift systems are different in hospitals in Japan which have a two-shift system such as the morning shift starting from at 08:30am. to 5pm. and the night shift starting at 4:30pm. to the next day at 9am. (Japanese Nursing Association, 2014). Whereas in Indonesian hospitals, it has a three-shift system: the morning shift 7am. to 2pm, afternoon shift 2 to 9 pm. and night shift 9pm. to next day 7am. (Rahma & Mas, 2016). Secondly, nurses coming to Japan as nurse candidates must work as nurse aides until they pass Japan's exam. The nurse candidates are not allowed to perform medical actions such as giving drugs or injecting and usually nurses in Indonesia perform medical actions, but when in Japan, nurse candidates perform basic human nursing care needs such as food, bathing and taking out elderly patients (Kurniati, Chen, Efendi, & Ogawa, 2017). In addition, the survey by Arianti (2013) reported the health workers under IJEPA that, before working, they received work support training on basic Japanese culture and language for one year (Indonesia of six months and Japan of six months). The training material does not have any unsynchronized Japanese exam material, which consists of knowledge, skills to provide nursing care, medical device technology, and behavior toward patients. This has an effect on nurses' unpreparedness for the NBE exam, thus adding to culture shock. The third pattern of differences in nursing practice is that Indonesian nurses lack experience in dealing with elderly patients, such as discharge planning, due to differences in the structure of population and diseases in Indonesia and Japan (Nugraha & Hirano, 2016). Additional culture shock differences in the workplace are that Indonesian nurses are not well-informed to the providing basic knowledge and skills necessary for hands-on care, basic human needs are always prioritized and to use healthcare advances in technology (Efendi et al., 2016). The fourth pattern of Muslim health workers working in Japan is they have an emotional conflict regarding religious practices related to job satisfaction which cannot be achieved when allowed to worship in the workplace, because worship has to take place in the kitchen or changing room. Various employment rules to Muslim female nurses include the prohibition on wearing hijabs while working in a hospital, while others appreciated. Muslim male nurses were disheartened by not being able to attend Friday worship, which is considered very important among male Muslims (Yoko & Setyowati, 2018).

The current study found that the culture shock predictors were associated with colleagues at the workplace. Indicators of a good work place is getting comfortable in the work environment related to colleagues who help each other to complete work and which must require communication (Rino et al., 2019). Colleagues' communication is a social support to improve coping mechanisms to solve problems in the work environment for migrant workers to work abroad who tend to experience culture shock so that they are better able to adjust in a new environment (Saputra, 2019). There are three patterns of colleague relationships related to cultural shock occurring within the migration of nurses under the EPA system. Indonesian nurses who have trouble getting accustomed to colleagues' relationships in work environment have a tendency toward culture shock such as they felt that Japanese were not open-minded; thus, it was difficult to exchange opinions as to any miscommunication. First, a pattern of the culture shock of differences in nurse colleagues relationships in Japan perceived the workplace relationships as too formal and hierarchical in that juniors had to obey their seniors. They were uncomfortable with colleagues' formal behavior in the workplace, even those with whom they privately had close relationship. Meanwhile, the nurse's colleagues relationship in Indonesia is un hierarchy (Yoko& Setyowati, 2018). The second pattern of differences in Japan hospitals is that the nurse relationship performs hands-on care to the patient and families in Japanese society are not directly involved in caring for sick family members, such as not helping with daily life activities (ADL). Indonesian family members pay specific attention to ADL care (Efendi et al., 2016). The third pattern of cultural differences are misunderstandings based on cultural values and beliefs and principles of terauputik communication. Indonesian nurses learned that they simply cannot touch patients in the same manner they do in their home country because formality in human relationships differs in Japan , in that there is a degree of physical distance maintained between human beings (Yoko & Setyowati, 2018). Impact of communication with colleagues who are not harmonious in the work environment tends toward work environment conflicts that cause work discomfort, which affects motivation, thereby affecting performance (Mosayebi et al., 2018). The good performance of Indonesian healthcare workers in Japan can serve as a brand image in the international job market (Arianti, 2013).

The current study found culture shock was not associated with employment rule and job experience, there is a tendency toward social support as a key factor affecting psychological adjustment (Lan, 2018). The workers in a foreign country experience culture shock linked to adjustment competency with adaptation in the foreign culture (Doki et al., 2018). The health worker's competency in sociocultural adaptation was found to be the strongest predictor of mental health, followed by the amount of social support received in the work situation and information needed to solve problems in socio-cultural differences in the host country so that they can enhance adapting to the culture shock (Nugraha & Ohara-Hirano, 2016). Candidates nurses and caregivers under IJEPA have obtained pre-departure training in which one of the training materials provides information on the employment rule and impacts on upgrading socio-cultural adaptation competency to manage culture shock in the host country (Widayanti & Sartika, 2020). Then they have

effective social support to get more information about the work environment of employment rules and Japanese culture from social media via the internet and sharing job experience with ex EPA nurses who have returned in Indonesia (Handayani, 2018). The information introducing job opportunities for nurses to work in Japan has been obtained to study basic Japanese in Indonesia nursing institutions (Prasetiani & Nugroho, 2014).

The present study showed that job experience was not associated to culture shock. There is a tendency toward under the EPA system, they sometimes compromise and adapt (Yoko& Setyowati, 2018). Mamangkey et al. (2015) reported that employees who have different job experiences between the old workplace and the new workplace are not related to culture shock experiences, meaning that employees used their new abilities by adapt to new workplaces through work competency training according to the needs of human resources in an influential new working environment toward increased performance. The job experience is a measure of long timework duration that a person has taken to understand and skill them in a job (Rino et al., 2019). Under the EPA, Japan requires a minimum two years of job experience to apply as a nurse candidate, which can cause patterns of deskilling, brain waste usually occurs in host countries when health professionals immigrate to usually high income countries (Kurniati et al., 2017; Nugraha et al., 2017). Usually, the candidate nurses' Indonesian job experience is to do medical tasks in which the nurse candidates must work as nurse aides until they pass Japan's exam by having to engage in non-medical tasks such as basic human needs for a three-year residence period, having to study the Japanese language state exam questions during shifts and return to their home country without passing the exam (Sato et al., 2016). The health worker under the EPA program working in Japan will not enhance their job opportunities when they return to Indonesia and can be deskilled, which affects the job experience of medical action decrease, while enhancing Japanese language skills. The ex EPA nurse mostly works not as nurses but in non-nursing fields such as private employees, Japanese translators, employees of Indonesian state-owned enterprises, hotel staff, insurance agents, and teachers (Kurniati et al., 2017). The job experience of ex EPA nurses who start to work in an Indonesian hospital is that they are not able to meet the expectations of their colleagues in running their role as a nurse maximally, especially difficulty adapting again when performing medical actions, such as injection or infusing (Mutiawanthi, 2017).

CONCLUSION

Based on the results of this study, it can be concluded Indonesian immigrant nurses in Japanese hospitals have job satisfaction and a colleague has a significant correlation toward culture shock with moderate strength of a positive correlation. This showed that the more nurses of moderate job satisfaction relationship were, the lower the culture shock level in nurses. The results of the study did not have a significant correlation toward the rule of employment and job experience to trigger a culture shock. The nurse's culture shock dominant factors are working environment and colleague relationships. Hopefully, the results of this study can be used to increase the resources of nurses to work abroad to input BP2MI as lessons learned that can be used to improve psychosocial health welfare in drafting agreements (MoU) to technical policies for Indonesian migrant workers, which may enhance the net benefits of migration. Job training institutions prepare nurses to work abroad through foreign language courses to study cross-cultural skills providing sociocultural adaptations skills in an abroad working environment to avoid culture shock. Nursing institutions should include a curriculum containing material about working abroad culture shock so that graduate nurses are mentally well-equipped to prepare to work abroad and can avoid stress.

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Original Research

A Normative Behavior of Pre-Travel Health Consultation and the Associated Factors among Travelers

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ABSTRACT

Introduction: Travelers may transmit diseases due to their behavior of travel, consequently travelers should consider preventive measurement through pre-travel health consultation seeking behavior. Pre-travel health consultation is a particular preparation ideally conducted by international travelers to obtain risk assessment and management to prevent the transmission of diseases. This study investigates the relationship of socio-demographic characteristics and itinerary on pre-travel health consultation behavior among international travelers in Badung, Bali.

Methods: A descriptive-correlative design using a cross-sectional approach employed 125 participants determined by a purposive sampling technique performed in the ten tourist destinations of Badung Regency. Data collection was conducted on February 15th until March 5th, 2020. Data demography, travel plan, and anonymous questionnaires regarding pre-travel health consultation behavior are used in this research. The Gamma coefficient correlation and Kruskal-Wallis statistic tests were performed in the study for bivariate analysis.

Results: The results showed that age ($p<0.001$; $r=-0.650$) and past-travel history to Bali ($p=0.004$; $r=-0.475$) were significantly correlated with pre-travel health consultation behavior among international travelers in Badung, Bali. Meanwhile sex, nationality, last education, travel duration, and types of the destination visited were not significantly associated with pre-travel health consultation behavior among international travelers in Badung, Bali ($p>0.05$).

Conclusion: The age and past-travel history to Bali seem to be predictors for travelers to uptake pre-travel health consultation, thus nurses should be able to promote the implementation of pre-travel health consultation by utilizing the media promotion appropriately adjusted to the age of travelers and travel experience.

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INTRODUCTION

International tourism has been increasing in the last decade due to the dynamic of individual mobility. It urges all aspects of human life to follow the movement. It was proved by the fact that the number of international travelers in the world has been growing steadily to around 1.1 billion in 2015 (Heywood et al., 2012). Approximately, 6.54% growth of arrivals to Bali in 2018 were made by international travelers (Bali Government Tourism Office, 2019), which indicates the escalation of traveling among international travelers. The high number of trip intensity can affect the health of travelers and the local population in the destination country. Travelers play a significant role in transmitting travel-related infectious diseases due to the their travel pattern and behavior (Heywood et al., 2012). Masen, Yohan, Somia, Myint, and Sasmono (2018) noted 66.2% of 201 travelers were infected with dengue also 48.7% was caused by dengue virus type 2 (DENV-2). Diarrhea or gastroenteritis, systemic febrile disease,

respiratory tract infection, and typhoid are other diseases susceptible for travelers (Sohail et al., 2019; Sumadewi et al., 2018). Additionally, in the beginning of December 2019, a newly severe acute respiratory syndrome-coronavirus 2 (SARS-CoV 2) was discovered in China and rapidly spread around the globe (Chinazzi et al., 2020). Consequently, many governments, including Indonesia's, admitted they were unprepared to cope with the pandemic and one of the strategies was to issue travel restrictions from and to Hubei, China (Chinazzi et al., 2020; Djalante et al., 2020). It shows travelers have health risks related to travel that require preventive behavior to alleviate travel-related illnesses and they should be prepared for all possibility, such as a pandemic.

Pre-travel health consultation (PTHC) implementation with a health professional is one of the preventive measures conducted by travelers before departure. It aims to reduce health risk during the trip, by assessing health risk, itinerary, and individual characteristics, communicating the information regarding infectious diseases risk adjusted to travelers' needs and providing risk management, such as relevant vaccination of the destination (Heywood et al., 2012; Paudel et al., 2017; Zuckerman et al., 2015). The effectiveness of this program can diminish risk behavior and improve the preventive measures of infectious diseases (Al-Abri et al., 2016). Tan, St. Sauver, and Sia (2018) also reported that travelers who had travelers' diarrhea (TD) and did not uptake PTHC would be faced with prolonged hospitalization and lack of capability to comply with medication regimen while diagnosed with TD.

Travelers that engage with health behavior have the probability to be affected by several factors. Predisposition, enabling, and reinforcing factors can encourage healthy behavior (Green, 1974). Sociodemographic characteristics such as age, sex, nationality, and education level were mentioned as predisposition factors that influenced PTHC seeking behavior (Adou et al., 2019; El-Ghitany et al., 2018; Shady et al., 2015; Zhang et al., 2016), yet Shady et al. (2015) revealed that sex was not significantly correlated to visits to the travel health clinic (THC). Moreover, travel plan characteristics, including travel duration, types of travel destination visited, and past-travel history, were noted as factors that influenced PTHC uptake behavior among travelers (Gagneux-Brunon et al., 2016; Pavli et al., 2014).

Although the PTHC utilization can provide a positive impact on international travelers that influences by their sociodemographic and itinerary, previous studies found that most travelers did not seek PTHC with a health professional (Heywood et al., 2012a; LaRocque et al., 2010; Paudel et al., 2017). Those studies showed that travelers had not yet carried out this program well. Nurses play a crucial role in practicing of health promotion in the community, thus conducting an assessment regarding knowledge, attitude, and practice (KAP) regarding PTHC is one of the initial nursing processes required to do in reaching and convincing travelers to implement the community-based program, otherwise the advice of nurses and other health professionals have to compete with non-medical information sources, such as the internet and friends (Bauer et al., 2013).

KAP are behavior domains that influence travel-related illness prevention (Omer et al., 2015). Al-Abri, Abdel-Hady, and Al-Abaidani (2016) found that most travelers had good knowledge and positive attitude regarding travel-related infectious diseases; however, only 22.5% of 204 travelers conducted PTHC. That condition describes that a good knowledge, and a positive attitude did not align with preventive behavior tangibly. Most of the previous studies investigated knowledge, attitudes, and practice regarding infectious illnesses related to travel (Adou et al., 2019; Chow et al., 2018), travel health (Al-Abri et al., 2016), and vaccination (Zhang et al., 2016). It shows that there has been no report that quantified a normative behavior of PTHC and associated factors among international travelers. This study was aimed to identify the relationship of sociodemographic and itinerary characteristics on PTHC behavior among international travelers in Badung, Bali.

MATERIALS AND METHODS

A quantitative study with descriptive-correlative design by using a cross-sectional approach was performed in the ten tourist destinations of Badung Regency, namely Sangeh Monkey Forest, Seminyak Beach, Kayu Aya Beach, Petitenget Beach, Canggu Beach, Batu Bolong Beach, Batu Belig Beach, Uluwatu Temple, Pandawa Beach, and Dreamland Beach. Data collection was conducted on February 15th until March 5th, 2020. This study examined several variables, including age, sex, nationality, last education, travel duration, types of the destination visited, and past-travel history to Bali as independent variables, additionally PTHC behavior was the dependent variable.

The population of this study was the total number of international traveler arrivals in Badung Regency in 2018, which was 2,951,941 arrivals. A purposive sampling technique used in this research and a minimum sample was 100 participants calculated by Slovin formula and the error tolerance level was 10% (0.1). International travelers aged ≥18 years, communication with English, the traveler willing signed the informed consent were eligible as a research participant, while international travelers who lived in Bali over 12 months were excluded from this study. A total of 125 participants were enrolled in the present study.

The primary data were collected by using self-administered and anonymous questionnaire that composed demographic data (birth of date, sex, nationality, and last education), travel plan (travel duration, types of the destination visited, and past-travel history to Bali), and PTHC behavior. The PTHC

behavior questionnaire comprised 20 items of statements to measure PTHC behavior normatively. The PTHC behavior questionnaire was developed by the researchers based on the literature review regarding the PTHC and encompassed: (1) The principles of PTHC; (2) Risk assessment related to the assessment of demography, itinerary, culture of travelers; (3) Risk communication associated to provides the information of the travel-related illness prevention, destination country, and vaccination adjusted to the traveler's requirement; and (4) Risk management, including administered the vaccination. It included positive and negative statements related to three indicators (KAP). The Guttman scale (true/false) was used for knowledge indicator and the Likert scale (strongly agree until strongly disagree) was used for attitude and practice indicators. The maximum score of PTHC behavior attained 68, classified into two categories of behavior: good (cut-off point median >50) and poor (cut-off point median ≤50). The instrument was translated into English by the translator from the Language Center of the Udayana University. The validity test of the questionnaire involved 30 travelers and the resulted Cronbach's alpha values were 0.454-0.608 for the knowledge indicator, 0.422-0.830 for the attitude indicator, and 0.478-0.751 for the practice indicator, while the reliability test of PTHC behavior questionnaire found Cronbach's alpha value. 0.898

The researchers obtained data collection permission from the institutions. Research explanation was delivered to travelers who volunteered and informed consent was administered after declaring willing to become a research participant in the current study. Data collection was conducted by the researchers without a research assistant. Our study was appraised by the Ethical Research Commission of the Faculty of Medicine, Udayana University and Sanglah General Hospital Denpasar by the approval number: 404/UN14.2.2.VII.14/LP/2020.

The univariate analysis was conducted to describe the characteristics of sociodemography, itinerary, and PTHC behavior of the participants by displaying the distribution frequency. Our study performed a bivariate analysis by using the Gamma coefficient correlation and Kruskal-Wallis statistic tests. The bivariate analysis determined the relationship between sociodemography and itinerary characteristics on PTHC behavior. This study employed 95% confidence interval ($\alpha = 0.05$) that was analyzed by using computer software.

RESULTS

Table 1 describes the sociodemographic characteristics of travelers, including 68% of participants were an adult category, 54.4% were female, 78.4% were Europeans, dominated by Russian, British, Dutch, German, and French. The domination of other nationalities was also reported from the United States (America), Indian (Asia), Australian (Oceania), and Moroccan (Africa). Most of the travelers had tertiary education (72%). In addition, Table 1 also reports travel plan characteristics. Approximately 54.4% of travelers had short-travel (≤28 days), 76.8% of participants visited the nature-based tourism, and 51.2% had not traveled to Bali. Table 2 also shows that most of the travelers had a poor category of PTHC behavior (54.4%) nonetheless 45.6% of travelers had good behavior.

Table 3 shows that there was significance with a strong and negative correlation between age with PTHC behavior among international travelers in Badung, Bali ($p < 0.001$; $r = -0.650$), moreover, past-travel history to Bali also had a moderate and negative association significantly ($p = 0.004$; $r = -0.475$). Other sociodemography and itinerary characteristics such as sex, nationality, last education, travel duration, and types of the destination visited were not significantly associated with PTHC behavior among international travelers in Badung, Bali ($p > 0.05$). Further analysis reports that a higher proportion of the good behavior was found among adolescent travelers compared to adult and elderly travelers. Female travelers also had a higher proportion of good behavior. Asian travelers reported a higher number of good behaviors compared to other nationalities from four continents that more likely had poor behavior. A good behavior was predominantly found among travelers who had secondary education (46.9%); however, there was no significant difference with travelers who had tertiary education (45.6%). A higher percentage of the good behavior was noted among travelers with short-travel, meanwhile, travelers with long-travel more likely had poor behavior. The proportional differences were not significantly reported among travelers that visited nature or wellness-based tourism, nevertheless, a higher proportion of the good behavior was found among travelers who visited the nature-based tourism. The first-time visitors were dominated by a good category of PTHC behavior (57.8%).

DISCUSSION

Our study evaluated PTHC behavior normatively and associated factors among international travelers in Badung, Bali. This topic is strongly relevant with the current situation in Bali because travel health is evolved by the policy makers in Bali and some health facilities have been providing travel health service. In addition, the number of tourist arrivals in Bali is growing steadily.

The finding of this study also showed that majority of the participants had a poor category of PTHC behavior. In contrast, previous studies found that travelers had a higher proportion of good knowledge (63.2%) and positive attitude (60.8%) toward travel health, nonetheless only 22.5% of 204 travelers received PTHC (Al-Abri et al., 2016). It indicates that the travelers are not able to demonstrate the

Table 1. The Sociodemography and Itinerary Characteristics of International Travelers in Badung, Bali in 2020 (n=125)

Variables	n	%
Age (year)		
Older adolescent (17-25)	24	19.2
Adult (26-64)	85	68.0
Elderly (≥65)	16	12.8
Sex		
Male	57	45.6
Female	68	54.4
Nationality		
European	98	78.4
American	11	8.8
Oceania	9	7.2
Asian	6	4.8
African	1	0.8
Last Education		
Primary education	3	2.4
Secondary education	32	25.6
Tertiary education	90	72.0
Travel Duration (days)[a]		
Short travel (≤28 days)	68	54.4
Long travel (>28 days)	57	45.6
Type of Destination Visited		
Wellness-based tourism	29	23.2
Nature-based tourism	96	76.8
Past-travel History to Bali (times)[a]		
First time	64	51.2
>1 times	61	48.8

[a] *Category based on cut off point median (not normal distributed)*

Table 2. PTHC Behavior among International Travelers in Badung, Bali in 2020 (n=125)

Variable	n	%
Pre-Travel Health Consultation Behavior		
Poor behavior	68	54.4
Good behavior	57	45.6

knowledge and positive attitude in a tangible behavior of the preventive measures because they assume that to commit with the preventive behavior, they need guidance. Notoatmodjo (2010) explained that a guided practice is an individual ability to require guidance in implementing a certain action, hence, in this stage, an individual cannot yet adopt or modify the preventive behavior in their life.

Our study also demonstrated that age had a significant and negative correlation with PTHC behavior among international travelers in Badung, Bali. It implies that the younger travelers were more likely to have a good behavior of the PTHC compared to the old group of travelers who had a poor behavior. Previous studies noted a consistent result, namely age was significantly correlated with PTHC seeking behavior (Gagneux-Brunon et al., 2016) and good knowledge regarding travel health (Chow et al., 2018). Likewise, Zhang et al. (2016) also reported that older travelers had lack of awareness of vaccinations, which plays a role in preventing disease. It showed that a negative association was found in the previous study. Conversely, Shady et al. (2015) found a different result.

The negative correlation between age and PTHC behavior could be explained because the younger travelers are more likely to have better risk perception, and this can be the protection, thus it can increase the focus to the risk and force travelers to indicate a positive attitude about hazards in the destination (El-Ghitany et al., 2018). Kwon et al. (2019) also explained that lacking compliance to the vaccination and malaria prophylaxis among adults and elderly is because they have frightened fear toward adverse effect of the vaccination, cost, they did not intend to adopt risky behavior during traveling, and had a history of past immunization.

A higher risk perception among older adolescent travelers was also reported in this study, they had the highest proportion of good category of the PTHC behavior (83.3%). This condition revealed that younger travelers are able to apply good knowledge and positive attitude to the real practice compared to older travelers, thus it seems the difference of theory in this research, namely age-maturity, tends to encourage individuals to adopt healthy lifestyle behavior (Potter & Perry, 2005). Age is well-known as a predisposition factor that affects behavior, the increasing age can describes the maturity in arguing and judgment (Green, 1974). Underestimating health risk, have traveling experience, and financial limitation among older travelers need to be considered; however, these are challenges for health professionals to provide the recommendation (Del Prete et al., 2019). Nurse has significant role as an educator, importantly to emphasize the

Table 3. The Relationship of Sociodemography and Itinerary Characteristics among International Travelers in Badung. Bali in 2020 (n=125)

Variables	Pre-Travel Health Consultation Behavior				r	p-value
	Poor		Good			
	n	%	n	%		
Age						
Older adolescent	4	16.7	20	83.3	-0.650	<0.001*
Adult	52	61.2	33	38.8		
Elderly	12	75.0	4	25.0		
Sex						
Male	34	59.6	23	40.4	-	0.283**
Female	34	50.0	34	50.0		
Nationality						
European	55	56.1	43	43.9	-	0.358**
American	6	54.5	5	45.5		
Asian	1	16.7	5	83.3		
Oceania	5	55.6	4	44.4		
African	1	100.0	0	0.0		
Last education						
Primary education	2	66.7	1	33.3	0.005	0.980*
Secondary education	17	53.1	15	46.9		
Tertiary education	49	54.4	41	45.6		
Travel duration						
Short travel	32	47.1	36	52.9	-0.317	0.067*
Long travel	36	63.2	21	36.8		
Types of destination visited						
Wellness-based tourism	16	55.2	13	44.8	-	0.924**
Nature-based tourism	52	54.2	44	45.8		
Past-travel History to Bali						
First time	27	42.2	37	57.8	-0.475	0.004*
>1 times	41	67.2	20	32.8		
Total	68	54.4	57	45.6		

**Gamma correlation statistic test (α = 0.05); **Kruskal-Wallis statistic test (α = 0.05)*

communication process effectively in order to administer an optimal nursing care which is influenced by language proficiency and communication of nurses (Swedarma et al., 2016).

Conversely, sex had no association significantly with PTHC behavior among international travelers in Badung, Bali. This result was consistent with previous studies, namely sex was not significantly correlated with visits the THC to conduct PTHC or seek health information (Kwon et al., 2019; Shady et al., 2015). In contrast, several studies reported that sex was significantly correlated to PTHC implementation, especially among female travelers (Chow et al., 2018; Heywood et al., 2012). This condition shows that sex is still a polemic which affects individual behavior.

Our study found that sex was not significantly associated with PTHC behavior because gender-related stigma has been shifting which is often linked to healthy lifestyle behavior. Stigma friction was caused by various programs from the World Health Organization, such as eradication of gender stereotypes, upholding gender equality, omitting gender barriers in accessing health, moreover implementation of gender-responsive and gender-transformative (World Health Organization, 2020). Therefore, further analysis noted that good category of the PTHC behavior is more likely found among female travelers. Female travelers also mentioned that they had a better perception in controlling behavior, receive more vaccines, and had higher compliance of malaria prophylaxis (Kwon et al., 2019; Lammert et al., 2017). Women were more motivated to conduct PTHC because they have awareness and anxiousness toward their health, do not adopt risky behavior, and men are not willing to attach with health information, which frequently correlates to masculinity (Chow et al., 2018; Ek, 2015). It implies that men and women have an equal position and an entitlement in accessing health facility and applying healthy behavior in their daily activity. Additionally, the globalization era has been leading the population to be interested in reading about health topics.

Moreover, nationality was not associated significantly with visits to the THC or seeking PTHC (Omer et al., 2015; Paudel et al., 2017), which showed a consistent result with this study. In addition, nationality was not significantly related with good or poor knowledge and attitude regarding travel health (Chow et al., 2018). Yet, other studies found that nationality was a predictor for travelers to visit the THC (Shady et al., 2015), lack of PTHC implementation seems more likely among immigrant travelers (Heywood et al., 2012).

Recently, every country has had an equal focus on addressing health problem-related communicable diseases, child and maternal health, and non-communicable diseases (Doubova & Pérez-Cuevas, 2018). This condition has pursued the availability and

accessibility to reach a health facility, thus deliberating the number of health professionals is a requirement (Doubova & Pérez-Cuevas, 2018). Green (1974) explained that availability and accessibility of resources and services are reinforcing factors that can influence individuals in applying health behavior. Health services such as promotion, preventive, curative, and rehabilitative will create a culture and belief in the community.

Furthermore, other analysis showed that most of the Asian travelers had good category of the PTHC behavior (83,3%). It could be caused by the Asian travelers have already known infectious illnesses, including malaria, typhoid, hepatitis A and B, dengue, rabies, and Japanese encephalitis; therefore, it cannot be risks for Asian travelers who visit Asia countries (Piyaphanee et al., 2012). Travel medicine practice was developed with focus on travelers from Western countries (Europe, North America, Australia, and New Zealand) that will be travel to the developing with tropical and sub-tropical climate countries (Leder et al., 2017; Piyaphanee et al., 2012). Per capita income country, health program and service, and promotion program also affect PTHC seeking behavior among travelers (Heywood et al., 2012; Shady et al., 2015).

Although our study noted inconsistency with several studies that reported level of education was significantly correlated with travel-related health risks and vaccine acquisition (El-Ghitany et al., 2018; Zhang et al., 2016), Shady et al. (2015) supported our findings that education level was not significantly associated with PTHC implementation, preventive measurement, and non-compliance with malaria prophylaxis regimen.

It occurred due to various accessible resources of the information provided for travelers related to travel health or which described the destinations' condition, such as website (Heywood et al., 2012; Zuckerman et al., 2015). The low numbers of PTHC implementation was because travelers had lack of trust to the health providers, hence the health providers need to update their information based on the websites frequently visited by the travelers (Zuckerman et al., 2015). However, PTHC seeking needs to be conducted with the health provider to obtain suggestions that are adjusted with travelers' needs and avoid misconception to the information which has already been accessed (Heywood et al., 2012).

Further analysis showed that travelers with secondary and tertiary education had higher proportion of good category of the PTHC behavior. Travelers with higher education level have the capability to receive information easier and be able to utilize the information for disease prevention (Notoatmodjo, 2010). El-Ghitany et al. (2018) assumed that education provides better skills to deal with health risks. Clinically, education is still a factor which influences individual behavior.

A negative correlation not significantly associated between travel duration with PTHC behavior among international travelers in Badung, Bali was also demonstrated in our study, which implies that travelers with long-travel duration are more likely to have a poor behavior as compared with travelers with short-travel duration. Likewise, previous study had consistent findings with this study (Gautret et al., 2011). This finding shows that there are other factors which affect PTHC seeking behavior: travelers unwilling to seek health information through PTHC implementation due to they have traveled before to the same areas and have elicited of PTHC in previous travel (Shady et al., 2015). Lacking awareness among travelers toward health risk was noted in this study, even travelers with long-travel should seek PTHC because they might acquire higher health risk exposure.

It was inconsistent with further analysis, due to travelers with long-travel (>28 days) dominated with poor category of the PTHC behavior (63.2%). Our finding was also confirmed in previous study that reported travelers who lived more than four weeks in the destination country were rarely likely to seek health information to the THC (Shady et al., 2015). It shows, clinically, travel duration affects traveler visits to the THC and against health problems (Chow et al., 2018; Shady et al., 2015; Vilkman et al., 2016). The prolonged duration of trip is associated with the enhancement of health risk exposure and PTHC seeking (Pavli et al., 2014). For instance, among 15,180 travelers who visited to Kenya with average length of stay was 13.2 days, it increased the incidence of TD that attained 64 cases per 100 travelers (Leder et al., 2015).

Although types of the destination were not significantly correlated with PTHC behavior, a consistent finding was also found in our study, namely types of the destination was not associated with the acceptance of malaria chemoprophylaxis regimen (Stoney et al., 2016). Nevertheless, previous studies revealed that types of the destination correlated with the improvement of compliance to the anti-vector prevention (Kain et al., 2019), and visits to the THC (Shady et al., 2015). It shows that for the enhancement of travelers visiting to t nature-based destinations, they should seek PTHC prior travel.

Most of the travelers have traveled to the nature-based destination (76.8%) and are dominated by a good category of the PTHC behavior (55.2%), although a poor behavior was also found in large proportion (54.2%). The nature-based destination aims to provide a 'back to nature' concept with a wide range of travel experience. including adventure tourism, ecotourism, and rural tourism (Roxana, 2012). Travelers who visit to the nature-based destination received higher health hazards, such as travel-associated communicable diseases (Gautret et al., 2011).

Most of the travelers from Western countries that enrolled in this study spent their time on the beach to gain a tanned skin by doing sun bathing and surfing. Rawlings (2006) explained that Western countries travelers have type I and type II skin pigmentation,

which implies both of those skin pigmentations are light pigmentation. The light pigmentation has fewer melanosomes, hence it could increase the sunburnt caused by UV light. The protection is vital to implement for travelers who visit to the tropical beach and sea by applying sun screen (Villard et al., 2017).

Moreover, there was a significant correlation between past-travel history to Bali with PTHC behavior among international travelers in Badung, Bali. Other studies also reported that travel history was associated with visits to the THC (Pavli et al., 2014; Shady et al., 2015), memory and knowledge after seeking PTHC (McGuinness et al., 2015). In contrast, previous studies mentioned that travel history was not a predictor for visiting THC (Liu et al., 2015), and knowledge regarding infectious diseases (Adou et al., 2019).

Further analysis described that the higher proportion of good category of the PTHC behavior was found among travelers without travel experience to Bali. It was showed a consistency with negative correlation in our study. Travelers who have traveled to Bali already knew the condition in Bali and had the confidence; in contrast, first-time travelers have alertness toward the health hazard related travel. Those conditions can affect their risk perception and unwillingness to comply with health recommendation (Shady et al., 2015).

This research has several limitations, including we were not able to reach out to all the tourist destinations mapped due to weather and uncertainty of the traveler's condition, thus we changed the target of the destination in Badung area. In addition, we did not identify PTHC implementation or seeking behavior and source of the information of PTHC among travelers prior the departure. We did not determine the time limit of past-travel history to Bali. Moreover, we had difficulty to accommodate travelers who visit a high mobility tourist destination.

CONCLUSION

To conclude this study, we found a significant and negative correlation between age and past-travel history to Bali with PTHC behavior among international travelers in Badung, Bali. Other variables such as sex, nationality, last education, travel duration, and types of the destination visited were not significantly associated with PTHC behavior. We recommend the travelers should uptake PTHC around six to eight weeks before departure. Nurses should be able to promote the implementation of PTHC to the target by heeding the age and past-travel history characteristics of the traveler because it can influence the compliance of travelers in implementing PTHC, thus nurses can develop an appropriate media promotion adjusted to the characteristics of travelers to persuade them to visit the THC. It also can be an opportunity for nurses to evolve their roles in the travel health sector as a care provider, educator, collaborator, case manager, and empower society to increase awareness toward health risk. Furthermore, we expected the government to consider our study while regulating the policy regarding PTHC implementation among international travelers as travel-related infectious disease prevention. A qualitative research needs to be conducted for exploring the factors related to travelers' awareness in implementing PTHC by addressing limitations and applying other health behavior theories.

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Original Research

Familial Experiences of Caring for Schizophrenia Patients during the Covid-19 Pandemic: A Qualitative Study

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ABSTRACT

Introduction: Due to the Covid-19 pandemic, families are facing problems caring for and implementing Covid-19 health protocols when caring for schizophrenia patients. A lack of knowledge and behavior changes make it difficult for the families to care for the schizophrenia patients. This study aims to explore the familial experiences of caring schizophrenia patients during the Covid-19 pandemic.

Methods: A phenomenological qualitative design was undertaken as of November 2020. A total of 10 participants via the purposive sampling technique were recruited. The study was conducted in Semarang, Indonesia. We used semi-structured interviews to obtain the data and we used thematic content analysis to examine it.

Results: From the 10 participants, we got three themes, namely family fears, financial problems, and health treatment access. The themes were obtained from the families of the patients who care for them on a daily basis. During the Covid-19 pandemic, caring for schizophrenia patients has become more difficult and the cause of a lot of worry.

Conclusion: The families experienced several problems when caring for schizophrenia patients. The families experienced fear of the schizophrenia patients being infected by Covid-19, the families worried about whether or not the schizophrenia patients would experience a relapse and they felt stressed due to the news circulating. The families also had to spend more money to cover the cost of the patient's care and transportation, and the schizophrenia patients were rarely controlled because of the family's fears. This problem can be an issue for nurses who should strive to provide proper education and plan interventions for schizophrenia patients at the family level.

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INTRODUCTION

The latest novel coronavirus disease (Covid-19) has become a problem around the world (Yang et al., 2020). Tens of thousands of people have died from this disease so far (Chakraborty & Maity, 2020). The transmission of Covid-19 from one person to another can be through droplets in the air, contaminated surfaces, fecal-oral or through contact with human waste. The prevention of Covid-19 transmission can be done by implementing strict health protocols (Kementrian Kesehatan Republik Indonesia, 2020). Not only that, Covid-19 also affects the families caring for schizophrenia patients. Various fears and worries arise from both the families and patients themselves.

Schizophrenia patients are vulnerable people who have increasingly experienced mental and psychosocial health impacts due to the Covid-19 pandemic (Kementrian Kesehatan Republik Indonesia, 2020). This vulnerable group needs special attention. The news of death and illness due to Covid-

19 could be a stressor for schizophrenia patients that may cause emotional problems. According to the WHO, (2020), a pandemic causes stress to various layers of society. Previous studies related to previous pandemics such as severe acute respiratory syndrome (SARS) have shown there to be a negative impact on the mental health of sufferers. Research among SARS survivors showed that in the medium and long-term (41-65%), the survivors experienced various kinds of psychological disorder (Maunder, 2009). In addition, a study conducted in Hong Kong showed that the psychological problems of SARS survivors did not diminish within one year of the incident and that 64% of survivors had the potential to experience psychiatric disorders (Lee, 2007).

The Covid-19 pandemic has caused stressors to arise. Families must improve their ability to adapt to the Covid-19 pandemic so then they are able to treat the schizophrenia patients optimally (Brailovskaia & Margraf, 2020). Due to the Covid-19 pandemic, caring for patients should reflect their health and security needs. Their relatedness needs consist mainly of their interpersonal needs, humanistic concern needs, and family needs. Furthermore, their growth needs are mainly reflected as a strong need for knowledge. Existence needs are the main needs during an epidemic, with the health and security needs influencing each other. Humanistic concern needs are the most important of the relatedness needs (Yin & Zeng, 2020). The government's efforts to overcome the mental and psychosocial health impacts due to the Covid-19 pandemic have been summarized by the composition of a guidebook for mental and psychosocial support and how to engage in mental and psychosocial support for the volunteers (Kemenkes, 2020).

A previous study showed that the family description of caring for schizophrenia patients includes the family knowledge of the disease, any treatment efforts, the family functions, social support (Attepe Özden & Tuncay, 2018), the family acceptance regarding readiness to care (Diorarta & Pasaribu, 2018), any emotional and physical burdens (Reknoningsih et al., 2015), support needs and changed perspectives (Attepe Özden & Tuncay, 2018; Ntsayagae et al., 2019). The experience of the families when caring for schizophrenia patients feels different in the Covid-19 pandemic. Families must care for the patients while adjusting to the health protocols on Covid-19. It is not easy for the families to do this. Thus, the researchers conducted this research with the aim of exploring the family experience of caring for schizophrenia patients during the Covid-19 pandemic.

MATERIALS AND METHODS

This research used a qualitative study with a phenomenological approach. In this study, the sampling technique used was purposive sampling. To get the participants, the researcher collected data on the number of schizophrenia patients in the study location and found 16 schizophrenic patients in total. The door-to-door technique to get participants according to the inclusion criteria was carried out. One of the family members who was responsible for the patient was selected as the participant. The participants were selected on the condition that they were able to read and write, that they live with the schizophrenia patients, that they had cared for the schizophrenia patients for approximately two years, that they were aged 16 - 70 years old, and that they were able to communicate in either Indonesian or Javanese. We got 10 participants in total who matched the study inclusion criteria. The identity of each participant was protected using a code known only to the researcher. In addition, the research data in the form of recordings, field notes, and other notes were kept confidential by the researchers and have only been used for research purposes.

The study was conducted in November 2020 in the public health center (PHC) in Semarang, Indonesia. We used semi-structured interviews to obtain the data. The interview guidelines were developed by the researchers. The interview guideline component consisted of the problems that arise while caring for schizophrenic patients during the Covid-19 pandemic such as family anxiety, how the family copes with problems, and the support system that the family needs. Each question set began with an open-ended question. The interview process was conducted in the homes of the participants and was only attended by the participants and researchers. This was done in order to get a detailed description of the information. As this took place during the Covid-19 pandemic, the researchers adhered to the health protocols by wearing masks, by not touching participants, and by maintaining a distance from the participants during the interviews. The interviews were conducted for 30 until 45 minutes. The interview process was carried out twice in order to get as complete of a set of information as possible. Data triangulation was applied to the interview design. The researchers used the methodological triangulation approach and researcher triangulation. The triangulation method involves using more than one data collection technique to obtain the same data, such as using audio recorders and observation techniques tied into the field notes.

The transcription process was carried out after completing the interview. When saturation was reached and no new information was obtained, the data retrieval process was stopped. The data transcripts and analyzes were returned to the participants for cross-checking. The researchers also engaged in consultations with experts in qualitative research and mental disorders to obtain the most accurate data. The researchers kept the raw study data non-anonymous for two months until the analysis and research processes were complete. The researcher submitted an application to the Health Commission Ethics Services for permission to delete the raw research data and it was approved.

The analysis process was carried out using a thematic analysis approach (Braun et al., 2006). The researchers were assisted by NVIVO software version 12 regarding the coding, data management and quotations gained from the participants.

The ethical principles, referring to the National Guidelines for Health Research Ethics in 2004, consist of three principles, namely respect for persons, beneficence, and justice. This study received approval from the Health Research Ethics Committee of the Health Polytechnic of the Ministry of Health in Semarang on 4 November 2020, number 276/EA/KEPK/2020.

RESULTS

In reference to the 10 participants in this study, the majority of the respondents were aged 30 - 45 years old with the majority of them having an education level of senior high school completion. The gender proportion of the participants in this study was equal between male and female, and the majority were housewives. The majority of the participants had treated the schizophrenia patients for 1 - 10 years.

In our study, we determined there to be three themes, namely family fears, financial problems, and health treatment access. The details for each theme have been described as follows.

Theme 1: Family Fears

We found that as many as 7 participants (P1, P3, P4, P5, P7, P8 and P9) in this study were addressing the fears of the family as a whole and the schizophrenia patients in particular being infected by Covid-19. This theme was identified through 4 sub-themes, namely death, non-compliance, and infectiousness. The participants expressed a fear of death caused by Covid-19. The participants saw a lot of news about deaths caused by Covid-19, so the participants felt afraid if their families and patients died from Covid-19. This is expressed in the following sentence:

"On television, there is a lot of news about the huge number of deaths due to COVID-19. I'm afraid... I'm afraid if my family and this patient will also infected by COVID-19. Can die from the disease. COVID-19 is not visible, so you don't know, and anyone can get out of COVID-19..." (P1)

Furthermore, the non-compliance of the patients concerning using masks and washing their hands made families afraid of the patients being more easily infected by Covid-19. This is expressed in the following sentence:

"You must know that schizophrenia patients have to be told, sometimes obey, sometimes not... sometimes they want to wear a mask, sometimes they take it off because they can't breathe. So it's hard to be told to use a mask. Wash hands before eating. This patient is very difficult to be told to comply with health protocols ..." (P7)

The participants mentioned that the Covid-19 disease is very infectious. 'So I have to be careful. I, my family, and patients do not get infected.' The participants also said that in order to reduce their fear, they listened to less news on Covid-19, limited the patients from interacting with other people, and advised the patients to wash their hands regularly. This is expressed in the following sentence:

"I'm also afraid if I catch COVID-19. Very dangerous. I usually tell patients to wash their hands frequently using running water in the bathroom. I also rarely watch news about COVID-19, so I'm not too scared." (P9)

Theme 2: Financial Problems

In this study, 6 participants (P1, P2, P3, P5, P9 and P10) revealed that caring for schizophrenia patients during Covid-19 had resulted in additional costs such as the cost of purchasing masks, hand sanitizer and safe transportation. While treating the schizophrenia patient, the family had to spend extra money while their income decreased. This is because several family members were fired from work. This theme was identified through the sub-themes of health protocol costs and daily living costs.

The participants complained about the additional costs of purchasing masks and hand sanitizer on a regular basis. At the start of the pandemic, masks and hand sanitizer were very expensive. However, the participants still bought these items to prevent themselves from being infected with Covid-19. This is expressed in the following sentence:

"The price of masks is very expensive. But we still have to buy that. So that I, my family, and the patient are not infected with COVID-19. It's okay for me to pay extra, as long as my family is not infected with COVID-19. But... if this continues, I can't. Because income has decreased..." (P1)

In addition, the participants also complained about the increase in the cost of basic necessities such as vegetables, rice, and transportation costs used to bring the patients to the hospital. The participants choose to save money by reducing any excess expenditure. Apart from that, the assistance from the local government was also very helpful. This is expressed in the following sentence:

"...What can we do? All the prices of basic necessities also go up. Vegetables, large, and others also went up. The transportation costs for treating my child to the hospital also went up. All prices have gone up. But I have to be frugal, not be wasteful, I have to be smart in managing expenses. The local government also provided assistance. Just lighten up ..." (P9)

Theme 3: Health Treatment Access

There were 7 participants (P1, P2, P4, P5, P6, P7 and P10) who said that while caring for schizophrenia patients during the Covid-19 period, they felt that the procedures they had to go through to get health treatment or control had to go through many procedures, such as checking their temperature, screening, and rapid testing. In addition, during a pandemic, it is rare for the patients to go to the hospital. The theme was obtained through 3 sub-themes, namely examination procedures, rarely in

control, and persuading the patients to control themselves.

The participants said that in order to be able to establish control at the hospital, the participants and patients must go through strict health examination procedures such as screening, temperature checks and proving that they are free of Covid-19 through rapid tests. The participants felt that this made ensuring control in the hospital take longer and be more difficult. This is expressed in the following sentence:

"To be honest, sir ... during the COVID-19 pandemic, there were more procedures for examination. My brother (patient) must wear a mask. It is very difficult for my sister to be asked to wear a mask. My brother also had to be examined before he was admitted to the hospital, using a thermometer like that shot. My brother got scared. Not to mention, first if you want to check you have to bring a rapid-test result. Have to spend more money. Yes, I find it more difficult during this pandemic..." (P2)

We found that during a pandemic, the patients are rarely under control and were often admitted to the hospital. This is because the procedure is long, and the participants were afraid that the patient can become infected in the hospital. The family themselves came to the hospital to get the medicine. This is expressed in the following sentence:

"I rarely took my son (patient) during this pandemic for treatment sir... I am afraid that my son will be infected by COVID-19. So, I myself came to the hospital to get the medicine. My son stays at home." (P5)

During the Covid-19 pandemic, the participants said that getting the patients to the hospital had become more difficult. One patient said that he was afraid that he would catch Covid-19 in the hospital.

"My brother is very difficult to control to the hospital. Especially during the COVID-19 pandemic. He (patient) is afraid of being infected with COVID-19. I'm scared too. Then, I usually chat with the doctor via WhatsApp for the consul regarding my brother's condition." (P7)

DISCUSSION

Covid-19 places an emotional burden on the families caring for schizophrenia patients. The emotional problems experienced by the families include an increased fear of death due to Covid-19, patient non-compliance with the health protocols, and the risk of transmission of Covid-19. Previous research has shown that Covid-19 induces fear in everyone (Fitzpatrick et al., 2020; Mertens et al., 2020). The previous research is in accordance with this research. We learned that the participants experienced a fear of being infected with Covid-19 which could result in the death of their family members. Providing appropriate information can reduce participant fear excessively.

Patients with schizophrenia have the potential to not comply with the Covid-19 prevention health protocols because of their impaired cognition and consideration. According to (Stuart, 2013) schizophrenia is characterized by changes in tension, cognition, sensation, personality, lifestyle, attention, willpower, emotions, thought processes, psychomotor, memory, association, and the consideration of others. Patients with schizophrenia are less aware of the external environment that is currently being hit by the Covid-19 pandemic and they are less able to make choices about wearing masks, maintaining distance, and washing their hands frequently to prevent Covid-19 transmission (London, 2020; Szczesniak et al., 2020). This situation causes the focus of the family on the patients with schizophrenia to increase, including accompanying them and ensuring that the patients do not contract and transmit Covid-19 by repeatedly advising the patients to comply with the health protocols.

In this study, we also found that during Covid-19, the participating families were very vulnerable to experiencing financial problems. During Covid-19, families need extra expenses to purchase masks, transportation, and daily necessities. Previous research has shown that Covid-19 causes financial problems that have an impact on meeting their needs (Adekoya & Oliyide, 2020; Wolfe & Patel, 2021). Not only that, to protect themselves from Covid-19, the families must buy masks at a higher price (Garber, 2020). Financial disruption greatly impacts the care of schizophrenia patients. The treatment required includes providing their basic necessities such as food and drink, using personal protective equipment, and the need for a consultation at the hospital. The Large-Scale Social Restrictions Regulation ultimately limits human activities in terms of working hours, the use of public transportation and the enforcement of trade restriction regulations. Collectively, these have a major impact on the business sector. People do not leave their homes due to the fear of contracting Covid-19, so the demand for offline products has decreased dramatically. In contrast, the online demand has increased sharply. According to Kiril Mankovski, in times like these, the majority of people tend to choose cashless transactions to maintain their health (Mihaela Rus, Mihaela Luminița Sandu, 2020).

During Covid-19, the participants faced difficulty getting access to and seen by the health services including more complicated health care procedures. This has an impact on the patients seeking control and treatment in the hospital. Previous research has shown that Covid-19 reduces the number of visits by schizophrenia patients for control at the hospital (Gonçalves-Pinho et al., 2020; Moreno et al., 2020). For this reason, persuasion techniques can be used by the families to make bringing the schizophrenia patients to the hospital easier (Rus-Calafell et al., 2015). Furthermore, during the Covid-19 pandemic, the participants came to the hospital to get the patient's medicine. This is done to keep the patient's condition stable during the Covid-19 pandemic.

This study provides an overview of the experiences of the families treating schizophrenia patients. However, this study is still limited in terms

of the number of participants. In the future, studies with a larger number of participants can provide a more detailed picture of the family experiences when treating schizophrenia patients.

CONCLUSION

The Covid-19 pandemic puts an emotional burden on the families in caring for schizophrenia patients. Fear of being infected with Covid-19, which can result in death, becomes an emotional burden for the participants. Not only that, the Covid-19 pandemic can result in financial problems that in turn can have an impact on patient care. This causes the basic needs and care of the schizophrenia patients to be disrupted. Furthermore, due to the limitations in terms of access to the health services, the patients still have to receive good care and their medication regularly. For this reason, families must look for other alternatives to treat the schizophrenia patients by making savings, taking drugs on behalf of the family and online consultation with doctors. Providing the correct information can reduce the level of participant fear regarding Covid-19. Furthermore, the results of this study can be used as basic information when making policies at the level of the local government. It can also allow nurses to determine the appropriate nursing interventions to use through education. Further research with different approaches and designs is needed for the development of the information.

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Original Research

Capacities and Needs Assessment on Health Emergency Management in Biliran Province, Philippines

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ABSTRACT

Introduction: This study aimed to describe the level of preparedness of the healthcare facilities and the healthcare professionals concerning the four components (Health, Psychosocial and Mental Health, Nutrition on Emergencies, and Water Sanitation and Hygiene) of the Health Emergency Management System (HEMS) in the province of Biliran.

Methods: The researchers used a sequential explanatory research design and utilized two sets of research instruments for the purpose of data gathering. The participants were healthcare workers from Rural Health Units (RHUs) and representatives from the Local Government Units (LGUs) in Biliran province in the Philippines. For the analysis of the quantitative data, a qualified statistician analyzed the raw data transcribed using the SPSS IMB 21 tool. The qualitative data was analyzed and processed using Mayring and Miles-Huberman's technique.

Results: The study found that the respondents were suitable to provide reliable data and to credibly assess the condition of the RHUs. They were also knowledgeable enough to determine the gaps confronting the RHUs, including their corresponding solutions. The healthcare facilities of the province were only rated to be average. Their capacity to provide post-traumatic counselling was poor, although their referral systems were rated excellent.

Conclusion: The study concludes that the healthcare workers of Biliran Province and the HEMS of the eight RHUs in the province are not prepared to manage health emergencies during disasters. The low capacity of the HEMS is due to the low utilization of the budget, resulting in insufficient supplies and equipment which is necessary when addressing people's immediate needs during disasters and health emergencies. The study recommends a thorough deliberation of the system to plug the gaps and provide rapid equitable health services during emergencies.

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INTRODUCTION

The Philippines is among the countries in Southeast Asia that is prone to natural disasters. Annually, an average of 80 typhoons develop in tropical waters according to the Joint Typhon Warning Center (JTWC) (Wingard & Brändlin, 2013). About 20 of these typhoons enter the Philippine Area of Responsibility (PAR) with 6 to 9 of them making landfall. An average of 5 of these typhoons is considered to be deadly. The strongest typhoon that ever had landfall, Super Typhoon Haiyan, struck the country in 2013 with Tacloban City and the entire Region VIII being the hardest hit areas (Fischetti, 2013). Typhoons in general can result in an outbreak of infectious diseases and in the case of Super Typhoon Yolanda, communicable diseases had the highest consultation rates in community health centers, followed by a

consultation related to injuries and non-communicable diseases (Salazar et al., 2017).

Given the country's disaster-risk profile, the government enacted Republic Act (RA) 10212 or the Philippine Disaster Risk Reduction and Management Act of 2010. This institutionalized the proactive Disaster Risk Reduction and Management or "DRRM" approach. The approach is the "systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster" (Williams, 2010). With the passing and approval of RA 10212, the National Disaster Risk Reduction and Management Council (NDRRMC) was established, which the Department of Health (DOH) is a member of. The DOH is mandated by law to work hand in hand with LGUs, along with other different agencies, to provide aid and health assistance to the communities through its programs such as the Health Emergency Management System (HEMS). HEMS is about securing the right to life with dignity as more than just a front line humanitarian response and relief during emergencies (World Health Organization, 2007) or beyond coping capacity that includes financing and human resources (Heylin, 1986).

In Eastern Visayas (Region VIII), Biliran province is considered to be a geo-hazard area. It is ranked number 5 in the country's top provinces due to the combined risks of climate- and weather-related change threats. In addition, Biliran's main island is part of the curvilinear belt of the quaternary volcanic center that is active in the eastern trench (*Biliran Volcano - Biliran Island*, n.d.). Given the vulnerabilities of Biliran province and the country as a whole, it is both critical and vital to evaluate the readiness and capacities of its health management systems during emergencies and crises.

This study was undertaken to determine the effectiveness of HEMS in the province of Biliran when handling emergency situations. This is in addition to assessing its readiness to deliver health services in the event of catastrophes. This study was also conducted to revisit the existing health-related programs and health facilities in the province, including their budget utilization, in order to assess their capacities in terms of prevention, mitigation and health service delivery in an emergency setting and in the recovery period after a disaster.

This paper can help the province of Biliran to determine the level of preparedness of its healthcare facilities, especially in terms of the prevention, mitigation and recovery aspects related to the 4 components of HEMS; health, psychosocial and mental health, nutrition and WASH. By knowing the status of their healthcare facilities including its strengths and weaknesses, the province can easily craft programs that will enhance the health services and capacities. This will be considered on par with the standards set by the DOH and other relevant agencies. The study can also add to the existing literature and to aid other studies in support of the local and international efforts of the governments and its agencies in relation to providing quality and immediate healthcare during disasters.

To guide the study regarding its conduct, the researchers assessed the three pillars that comprise the HEMS of Biliran province. The three pillars are profiles, the readiness capacity and financial capacity. These together make up the foundation of HEMS.

Once the three pillars have been assessed through data gathering and analysis, the level of the four components of HEMS will be determined. The researchers can then describe the current state of HEMS in the 8 RHUs of Biliran that have contributed, thus fulfilling the objectives of the study.

MATERIALS AND METHODS

This study was primarily qualitative with a very minimal quantitative component. It only used the quantitative dimension during the gathering of the data that utilized checklists and a rating system to draw out the findings and conclusions. No extensive and elaborate quantitative tools were utilized for the computations. The study further utilized sequential explanations as its research design.

The samples of this study were taken from the 8 RHUs and LGUs of Biliran province. The purposive sampling method was used to select the 33 study participants. The samples were healthcare workers, such as municipal health officers, midwives and nurses and budget officers, from the LGUs. The respondents of the FGDs were representatives from the LGU which consisted of one Planning Coordinator, one Budget and Finance Officer, and two RHU representatives.

The inclusion criteria were employment in one of the 8 RHUs and LGUs of Biliran province. The exclusion criteria were all those not mentioned in the inclusion criteria.

The second phase of the data collection process involved collecting qualitative data from the key informant interviews and Focus Group Discussions. The qualitative data gathered assisted the researchers in explaining and interpreting the quantitative side of the research. The interviews assisted the researchers in coming up with the preliminary analysis of the data. To ensure that the data was gathered properly, pre-field activities including the preparation, pre-testing and modifying of the questionnaire tool were conducted. The modified questionnaire went through pilot testing at five different sites utilizing Cronbach's alpha test. The tool had to attain a value of 86% in the five selected disaster-prone sites in order to validate its reliability and internal consistency. This also entailed training the field enumerators or fieldworkers based on the research instruments administered. Focus Group Discussions were conducted among the RHU personnel in order to gather insights specifically related to determining the gaps or challenges in the 8 RHUs of Biliran.

The researchers used a modified version of the DOH Safe Hospital in Emergencies and Disaster or SHED (Health Emergency Management Bureau & WHO Western Pacific Regional Office, 2009) and the WHO Hospital Emergency Response or HER (Commission, 2013) checklists and rating system as it consists of research instruments with question at the end of the checklist in such a way that the instrument will capture both the qualitative and quantitative data. The ratings were based on the healthcare facility's structure, readiness, referral system, healthcare capacities, emergency preparedness, supplies, water and food capacity, sanitation and waste disposal capacity, and post-traumatic counseling capacity. All of the indicators were rated with 5 as the highest or excellent and 1 as the lowest or poor. To utilize the forms, the checklist was filled in by the local healthcare professionals in the 8 LGUs in the province.

To ensure the quality of the data collection, a series of activities were conducted prior to the actual gathering of the data. The activities included the preparation, pre-testing and modifying of the questionnaire tool. The modified questionnaire went through pilot testing at 5 different sites utilizing the Cronbach's alpha test. The tool had to attain a value of 86% in the 5 selected disaster-prone sites in order to validate its reliability or internal consistency. This also entailed training the field enumerators or fieldworkers based on the research instruments administered. Post-field work activities were also conducted. The activities were not limited to the final drafting and processing of the report and data and it entailed other relevant activities such as a review of the data gathered to achieve the desired output.

The collection of the data was conducted between January 2017 and October 2018 in all 8 RHUs and LGUs in the province of Biliran in the Philippines. The questionnaires were personally administered and collected by the lead researcher with the help of the research assistants. Ample time was given for the respondents to accomplish the questionnaire and to answer the questions during the interviews and focus group discussions. Some of the topics discussed included the current state of their RHU and other related information in relation to their health care facility's capacity to respond to emergency situations. The respondents were also asked to describe their health care emergency budget and its utilization over the last 5 years. The retrieval of the questionnaires was also done by the researchers.

The gathered data was analyzed based on its type. For the quantitative data, basic statistics were employed. All raw data was transcribed into SPSS IMB 21 for analysis and evaluation by a qualified statistician. The qualitative data was analyzed and processed using Mayring (Mayring, 1969) and Miles-Huberman's (Dull & Reinhardt, 2014) technique. Mayring (Mayring, 1969) utilized systematic and rule guided qualitative text analysis which attempts to contain some of the methodological strengths of the quantitative context analysis to arrive at a concept of the qualitative procedure. On the other hand, Miles-Huberman's (Dull & Reinhardt, 2014) technique describes the major parts of the data analysis such as the data reduction, data display, conclusion drawing and verification. The thematic analyses extracted from the principles were validated by the respondents of the KIIs and FGDs. The instruments used in the study were found to be valid and reliable as they were developed by the World Health Organization and are utilized by the government's lead agency to provide the public health services.

This study adhered to ethical principles in the conducting of this research. Before gathering the data from the target offices and individuals, the researchers communicated with the target respondents' respective head of office. The researchers were also provided with approval by the ethics committee of their institution and relevant entities which allowed them to conduct the data collection for the benefit of the study. Before the data gathering, the participants were oriented with the purpose of the study and assured confidentiality regarding the data collected from them. Data protection was also observed throughout and after the conducting of the study. After the data gathering and interviews were completed, the researchers thanked the participants for their participation. The researcher stored the data for a year after the research was completed, after which the data will be completely deleted.

RESULTS

In reference to the 10 The data shows that the respondents were either middle aged or old-aged, and that the majority of them (81%) were female. The majority of the respondents (37%) were comprised of Public Health Midwives, followed by Municipal Health Officers (30%).

Another finding of the study is that the majority of respondents were degree holders of Nursing, Midwifery and other programs. Furthermore, 97% of the respondents hold permanent positions while the remaining 3% hold contractual positions.

Regarding the structure of the RHUs, the highest rating was 3 garnered by both Naval and Caibiran RHUs with Biliran having the lowest at 1. The RHU facilities were rated based on their capacity to accommodate patients during both normal and emergency situations and whether they have an ongoing physical plan for improvement. The RHU was also rated based on their accreditation given by the National Disaster Medical System.

Regarding the readiness capacity of the RHUs, Caibiran and Naval both gathered a rating of 3. The rest of the RHUs were at 2 and 1. It must be noted that 3 is an average score, which means that the RHUs did not reach the optimum standard rating for an RHU to be considered prepared. The readiness capacity of the RHUs was assessed based on the number of available health personnel who were on-call 24/7, the

availability of PPEs in the RHUs and the trainings that the health workers have undergone.

Regarding the aspect of the referral system and its functionality, the study found that all 8 RHUs were rated 5 or excellent. This means that the personnel are already trained and knowledgeable and have a full understanding of the process and what they are going to do when they need to refer a patient to the nearest recommended health facility for further medical assistance.

In terms of the healthcare capacity, the results show that Caibiran and Naval are both rated 5 for this category while the lowest rated were Biliran and Maripipi at 3. Emergency preparedness, which was the main point assessed in this study, refers to the RHU's existing emergency disaster plan and its usability. The study found that 5 out of the 8 RHUs only have average capacities while the remaining 3 RHUs were rated below average. Concerning the availability of supplies, water and food in the RHUs during disasters, only Caibiran obtained a score of 4 while the rest of the RHUs were rated 3. A similar finding was noted for the sanitation and waste disposal capacity of the RHUs. All RHUs were rated above average.

Another salient finding of the study was the RHUs' poor capacity to provide post-traumatic counselling, which was poor across all RHUs with only 2 or below average to 1 or poor as their rating.

To satisfy the aim of the study, which was to identify the gaps and challenges in the RHUs and to find tailored-fit solutions for the identified gaps, the data collected was categorized into three groups; prevention, mitigation and recovery. The following Table 1, Table 2 dan Table 3 are presented on the supplementary materials (Supplementary 1).

DISCUSSION

Regarding the budget utilization trends, it was found that there is a budget allocation for health emergencies in all RHUs in Biliran. However, it is glaring and noticeable that the majority of the expenditure is way lower than the budget allocated. For instance, Naval had a 6.2 million budget allocation for health emergencies in 2016. However, they were only able to spend 2 million of the funds allocated. In Kawayan, they had a budget of 3 million but were only able to spend around 700 thousand in 2015. This trend is similar across all of the RHUs in Biliran province within the 5-year period.

Healthcare Professionals' Profile

The study primarily perused the demographic profile of the healthcare professionals who were interviewed as the key informants and participants of the focus group discussions. As can be noticed on the results, the majority of the participants were from the categories of old age and middle age. or 46 to 59 years old and 22 to 45 years old respectively. Both age groups totaled 42% of the total number of respondents. This is not a far cry from the findings of Abrigo and Ortiz (Abrigo & Ortiz, 2019) stating that the median age for physicians and other health workers is 42. This goes to show that the respondents who participated in the study were in their prime (22 - 45 years old) who can thus effectively articulate and express their ideas in a straightforward manner. On the other hand, those belonging to the older group (46 - 59 years old) had been working in the health industry long enough to share their insights and experience that was necessary when creating the valuable analysis in this study.

Based on the data gathered from the survey forms, 27 (82%) were female while only 6 (18%) were males. This imbalance between the number of male and female health workers was also mentioned in the study by Szabo et al. (Szabo et al., 2020) in their research in Nepal and Finland. This finding also corroborates with the study by Abrigo and Ortiz (Abrigo & Ortiz, 2019) stating that the once male-dominated industry has shifted towards being female-dominant. This is not only in the setting of the Philippines but also in Western countries such as in Canada, where 4 out of every 5 health workers are women (Galarneau, 2006). According to the World Health Organization, 70% of the world's current health workers are women (Ghebreyesus, 2019). The top position in the RHUs, that of the Municipal Health Officer (MHO), is also handled mostly by women at 70% with only 30% being men. This contradicts the findings of Ghebreyesus (Ghebreyesus, 2019) stating that men are more likely to be physicians and specialists than women, and that they are more likely to hold a leadership position. While the global statistics and data show that the overall labor and working conditions for women is disadvantageous compared to men, having more women healthcare workers in the RHUs or in the local settings makes the healthcare services more accessible and equitable for women, especially those with special needs. This includes pregnant or lactating mothers because women healthcare workers can more easily understand their special needs and are more likely to provide these services to women, especially during disasters when the healthcare services are highly needed.

The results of the study indicate that the majority of the respondents are Public Health Midwives (PHM) (37%), followed by Public Health Nurses (30%) and MHOs (24%). This data further concretizes the findings of the different studies indicating a lack of MHOs or doctors in the Rural Health Units (RHU). The majority of the LGUs in Biliran have only one government medical doctor. This is inversely proportional to the population to be served, especially during disasters. The results of the KIIs and FGDs coincide with this data as the respondents shared that they need more health officers in the evacuation centers and medical doctors during disasters. The Philippines Health Systems Review written by Dayrit (Dayrit et al., 2018) and their colleagues stated that there are only 3.9 government

physicians in the country for every 10,000 population.

The study also revealed that 97% of the respondents hold permanent positions in the RHUs while only 3% of the respondents have a contractual employment status. This reveals that while there is an insufficient number of healthcare workers in the RHUs, the workers are predominantly holding permanent positions which somehow augments the labor conditions of the healthcare workers in the rural health units. However, this does not negate the need to hire additional doctors and healthcare workers to meet the healthcare demands of the people, especially during emergencies.

Healthcare Facility Profile

The healthcare facilities of the 8 RHUs in Biliran province were gauged in terms of their preparedness to provide any of the necessary health services during disasters. The ratings were based on the healthcare facility's structure, readiness, referral system, healthcare capacities, emergency preparedness, supplies, water and food capacity, sanitation and waste disposal capacity, and post-traumatic counseling capacity. All of the indicators were rated with 5 as the highest or excellent and 1 as the lowest or poor.

For the structure of the RHUs, the highest rating was 3 garnered by both Naval and Caibiran RHUs with Biliran having the lowest at 1. The RHU facilities were rated based on their capacity to accommodate patients during normal and emergency situations, and if they have an on-going physical plan for improvement. For the referral system of the RHUs and their functionality, all 8 RHUs were rated 5 or excellent. This means that the personnel are already trained and knowledgeable and have full understanding of the process and what they are going to do in case they need to refer a patient to the nearest recommended health facility for further medical assistance.

Healthcare capacities is used to refer to the RHUs' capacity to provide medical assistance such as burn care, wound/trauma care, neonatal care and maternal care, among others. The results show that Caibiran and Naval were both rated 5 for this category while the lowest ratings were given to Biliran and Maripipi at 3. Although the latter RHUs got the lowest rates, they are still considered to be average. Thus, they can still dispense the necessary healthcare during normal days and during emergencies.

Emergency preparedness, the main point assessed in this study, refers to the RHU's existing emergency disaster plan and its usability. The data revealed that 5 out of the 8 RHUs only have average capacities while the remaining 3 RHUs were rated below average.

Regarding the availability of supplies, water and food in the RHUs during a disaster, only Caibiran obtained a score of 4 while the rest of the RHUs were rated 3. This is a similar finding to the data on sanitation and waste disposal capacity in the RHUs. All RHUs were rated above average. Water and food supply are heavily related to sanitation and the waste disposal capacity because if there is no water and food supply, sanitation will be a major challenge, especially in an evacuation setting where the centers are normally crowded. If there are large number of families cramped into an evacuation center, the chances are that the sanitation and waste disposal will be poor, more so if there are only few personnel manning the area. It was revealed that the RHUs are capacitated to provide the necessary services when needed, such as in the case of emergencies.

Based on the results of this study, the capacity of RHUs to provide post-traumatic counselling was poor across all RHUs with only 2 or below average to 1 or poor as the given rating. In developing countries such as the Philippines, the provision of mental health and psychosocial services is often neglected during disasters and emergencies due to scant resources. Whatever resources the LGUs have would be allocated to immediate needs such as relief goods, retrieval operations and evacuation center maintenance. Mental health is commonly not considered to be a priority, more so because its impact is not easily detectable unless a thorough examination is conducted by experts.

Readiness Capacity of the 8 RHUs in Biliran Province: Gaps/Challenges and Identified Tailored-fit Solutions

The data gathered from the respondents during the KIIs and FGDs were categorized into 3 groups: Prevention, Mitigation and Recovery.

As illustrated in Table 1, the respondents cited insufficient funds as being behind the lack of training and capacity building in its front liners, particularly the BHWs and responders at the barangay level. This knowledge gap was mentioned in Khan's (Khan et al., 2018) study, in addition to the need to come up with a framework that understands the complexity of health systems in an emergency context. By having the right capacities and plans in place, the overwhelming of the health systems during disasters will be prevented (Landesman & Burke, 2017). The respondents also emphasized that in order to prevent disarray during disasters, supplies such as medicines, emergency kits and even food packs should be prepared at all times. There should also be a separate supply of medicines that are specifically allocated for emergency purposes. This way, the RHUs are prepared at any given time if a disaster or emergency strikes. Another gap identified by the respondents in terms of prevention is poor garbage collection since there is an insufficient number of garbage trucks. This is also aggravated by the fact that some of the houses do not have their own toilets. With systematized sanitation in the communities, an outbreak of diseases could be effectively prevented. Regarding the aforementioned gaps, the respondents recommended the early procurement of supplies, medicines and food packs in order to prevent

cramming and for the proper distribution of basic necessities to take place in the event of disasters.

Table 2 presents the gaps and challenges identified by the respondents in terms of mitigating the impact of disasters, including the tailored-fit solutions recommended. The respondents identified a lack of information and awareness in the surrounding communities as one of the major barriers to reducing or mitigating the effects of disasters. For instance, anthropogenic activities, such as throwing of garbage and human and animal waste into the sea, can result in health threats and emergencies. That said, they can be prevented with the right awareness of its effects. During disasters, a lack of understanding of how to behave, such as maintaining personal hygiene while staying at evacuation centers, can also increase the risk of contracting and spreading communicable diseases, especially among vulnerable groups. All of these can also be addressed with the right information disseminated to the public prior to disasters. However, it was also expressed by the respondents that one of the barriers to getting a full grasp on the impact of disasters is difficulty understanding the communication materials provided to the communities. Thus, the respondents recommend that the authorities use the local dialect when spreading information to the communities. One glaring example was the use of the term "storm surge" by the authorities during super typhoon Haiyan. Had the people known what a storm surge was or had the authorities used the term tidal wave instead, more people would have evacuated and the impact of the super typhoon would have been mitigated (Ocon & Olaff, 2015).

The lack of manpower and healthcare workers in the health facilities and evacuation centers was also pointed out by the respondents. Having enough healthcare workers would also spread out the delivery of services among the evacuees and victims of the disaster, allowing the evacuation centers to be effectively managed. Then again, this relates back to the need for a budget since hiring more RHU personnel requires an additional budget for their salaries and benefits. This reflects that there are several aspects and elements involved in effectively mitigating the impact of disasters and emergencies, and that it is important to take a comprehensive look at the different aspects in order to manage the situation and understand how the aspects interplay (Pourhosseini et al., 2015).

Another challenge identified by the healthcare workers in the RHUs is the lack of the necessary means to respond to emergencies, such as the lack of ambulances or vehicles for rescue operations, the lack of communication equipment, no back up or emergency power supply and the limited budget with which to operationalize rescue initiatives. The respondents believe that having all of these needs met/in place would dramatically reduce the impact of disasters.

The respondents also mentioned that their RHU is located right in front of the sea. They see this as a potential risk to their safety and to that of the people who will seek medical assistance from the RHU during an emergency. Simpson (Simpson, 2001) in his study stated that the key to averting disaster or minimizing its effects is a solid data security plan where a facility identifies the existing risks and develops a plan to counteract them to ensure the patient's health and their data. The findings of Simpson's study correlates with the cited solution of the respondents which is to review the hazardous areas in their locality and to implement the necessary steps to mitigating the risks and its impacts.

Table 3 reveals the identified gaps and challenges and the corresponding solutions that the respondents identified in terms of recovery after a disaster. Knowing that Biliran province is considered to be a geo-hazard area, the area is prone to natural calamities and other forms of health emergency. The lack of evacuation centers and facilities currently hampers its immediate recovery after a disaster strikes. A contingency plan for disaster recovery (*Disaster & Recovery Planning : A Guide For*, n.d.) that includes the construction of the necessary buildings and infrastructure is a sound solution to the identified gap. However, the data reveals that even if the RHUs created exemplary plans to hasten the recovery of the health system, the plans would be rendered useless without the necessary budget and its speedy release. Faster recovery after a disaster would also be easier to achieve if there was the necessary equipment made available, such as backhoes for road clearing operations. This statement was also mentioned in the study by Dela Cruz and Ortega-Dela Cruz (Cruz & Cruz, 2019) where they found that a lack of equipment, technological innovations, insufficient knowledge, and skills and human resources hampered the speedy recovery of a disaster-stricken area. The purchasing of heavy equipment or linking to the right government agencies were seen of as two solutions to this particular recovery challenge.

Budget Utilization Trends of the 8 RHUs in Biliran Province

This study looked into the budget allocation of the 8 RHUs of Biliran vis-à-vis their actual utilized funds or expenditures. The data was collected over 5 years from 2013 to 2017 to determine the budget utilization trends of the RHUs for health emergencies. It must be noted that there was no data for the total funds expended (TFE) in 2017 for all RHUs because the figures were not yet made available as of the time of the data gathering.

By looking at the figures, one can easily determine that there is budget allocation for health emergencies in all RHUs in Biliran. However, it is noticeable that the majority of the expenditure is way lower than the budget allocated. This goes to show that the LGUs allocate funds for health emergences, although the amount varies depending on the budgetary and

financial conditions. Nevertheless, there are funds for health emergencies. The only thing questionable is the low burn rate or expenditure of the RHUs. The data gathered from the LGUs contradicts with the data collected from the respondents stating that there are limited supplies for use in an emergency response due to insufficient funds. The figures coincide with the findings of Katz, Attal-Juncqua and Fischer (Katz et al., 2017) stating that allocating a budget for health emergencies would not suffice without coordination and the speedy disbursement of funds. Barasa et al. (Barasa et al., 2017) also emphasized the importance of proper budgeting in their study.

The researchers were able to find conclusive evidence to satisfy the aims of this study. However, this study is limited to the provinces of Biliran with the samples derived from the RHUS and LGUs. The sample representatives from the LGUs were low since most of them were not available during the time of the data collection. However, this limitation does not negate the quality and validity of the general findings of this study.

CONCLUSION

All in all, based on the demographic data, the respondents were the key healthcare personnel from the RHUs and LGUs in Biliran who were able to dispense reliable information and were knowledgeable on the subject matter.

While the facilities and its personnel are capable of referring patients, due to the capacities given, the RHUs and its healthcare workers fall short or are even rated poor in terms of providing post-traumatic counselling due to the fact that mental health is not a priority service during disasters.

The study concludes that a gap lies in the process of requesting, disbursement and procurement which logically impacts on the service delivery throughout the prevention, mitigation and recovery phases during a disaster. The study also concludes that if and when a disaster strikes at any given time, the healthcare facilities may have difficulty delivering adequate services or providing immediate relief or rescue operations because the health emergency management system requires a thorough deliberation to stop the gaps and provide rapid equitable health services, especially to the underserviced and vulnerable groups. The gaps and challenges in the health emergency management systems are recognized and tailored-fit solutions have been accurately and reliably identified. The problem lies in the process and lack of the right capacities of the RHUs to follow and understand this process for the right and timely utilization of the budget.

Furthermore, this study recommends providing capacities and involving healthcare professionals and workers in the budgeting and overall financial process in order for them to contribute to developing effective health emergency plans that address the recurring needs of the communities during disasters and emergencies.

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Original Research

Premarital Counseling Affects Primigravidas' Knowledge and Attitude on Reproductive and Sexual Health

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ABSTRACT

Introduction: Unplanned pregnancy has been a worldwide issue, many of which end as unplanned abortions, miscarriages and deliveries. One-time premarital reproductive and sexual health counseling has been chosen as a program; however, its later effect on knowledge and attitude has not been evaluated. This study aimed to analyze the effectiveness of such premarital counseling for prospective brides on their knowledge and attitude during their first pregnancy.

Methods: The exposed group of 20 and control group of 40 primigravida participants were selected consecutively. Questionnaires were distributed online using Google Form application to participants to gather data on premarital counseling attendance in the past, and current knowledge and attitude. The influences were tested with logistic regressions at the significance level (α) of 0.05.

Results: There was influence of sexual and reproductive health counseling for the bride and groom on the knowledge (p = 0.036 OR = 8.480 95% CI = 1.153 - 62.346) and the attitude (p = 0.020 OR = 5.411 95% CI = 1.311 - 22.329).

Conclusion: Premarital sexual and reproductive health counseling influenced primigravidas' knowledge and attitude. The counselling should be intensified and extended to other cities to improve knowledge and attitude of primigravidas. Studies are needed to measure the effect of primigravidas' knowledge of and attitude toward reproductive and sexual health on the outcome of the pregnancy.

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INTRODUCTION

Unplanned pregnancy has been a worldwide issue, many of which end as unplanned abortions, miscarriages and deliveries (Omani-Samani *et al.*, 2019). Sexual and reproductive health counseling is an approach to increase the knowledge and attitudes of the prospective bride and groom in order to plan and prepare for a healthy pregnancy and to give birth to a quality future generation (Kemenkes, 2018). Premarital counseling materials include the philosophy of marriage, gender inequality and marriage, information about pregnancy, childbirth, postpartum phase, sexually transmitted infections, early detection of cervical cancer, and marriage myths. The effectiveness of counseling immediately after counseling has been studied (Amalia and Siswantara, 2018). However, the effectiveness of prenuptial counseling on their knowledge and attitude just before their first pregnancy starts is not widely known. The knowledge and attitude of primigravidas reflect their knowledge and attitude just before their first pregnancy.

Since the issuance of the Surabaya Mayor's Instruction in 2017, every prospective bride has to

take part in the premarital program (Walikota Surabaya, 2017). So it is expected that there is 100% community participation as the prospective brides are required to get a proof from the health authority before they are eligible to register their marriage. However, based on information from midwives in the preliminary interviews, there are still prospective brides who do not receive reproductive and sexual health education for the prospective bride and groom because they are migrants from outside Surabaya. Gading and Wonokusumo Health Centers (Puskesmas) of Surabaya were chosen as the location of this research because both centers have implemented sexual and reproductive health education programs for prospective brides and had the most first visits (K1) in Surabaya. According to the Surabaya City Health Profile (Dinas Kesehatan Surabaya, 2018), the first visit of pregnant women at Puskesmas Gading reached 1473, and at Puskesmas Wonokusumo reached 1120. This study aimed to analyze the effectiveness of such premarital counseling for prospective brides on their knowledge and attitude during their first pregnancy.

MATERIALS AND METHODS

This was a retrospective cohort study. Data collection was from February-June 2020, and began with identifying primigravidas with and without experience with premarital counselling in the past, followed by measuring their current knowledge and attitude on sexual and reproductive health.

The population of this study was all primigravidas in Puskesmas Gading and Puskesmas Wonokusumo Surabaya.

The research sample was primigravidas at Puskesmas Gading and Puskesmas Wonokusumo Surabaya in February-June 2020 meeting the following inclusion criteria: primigravida and minimum education of junior high school.

The sample size was calculated using the Fleiss formula and the sample size calculation used data from Anisafitri's research (Anisafitri, 2019). The calculated sample size of the exposed group was 20. Telephone numbers of primigravidas were provided by both puskesmases. The proportion of primigravidas exposed and unexposed to counselling who were willing to enroll in the study were 1:2, hence the proportion of sample sizes were 1:2. Sample was selected consecutively.

From May to June 2020, prospective respondents were contacted by telephone and guided to fill out an online Google Form to obtain data on participation in sexual and reproductive health counseling for future brides in the past, and knowledge and attitudes during this first pregnancy. Knowledge was measured with 10 closed-ended questions regarding sexual and reproductive health for the prospective bride and groom and attitudes were measured with 10 closed-ended questions on a 4-point Likert scale. Knowledge was categorized as good if the respondent could answer 81-100% of questions correctly, and categorized as poor if they answered correctly less than 81%. Attitude was categorized as favorable if the T-Score more than mean of T and unfavorable if the T Score less than mean of T (Azwar, 2013). The authors formulated a questionnaire based on a guide book by the Ministry of Health's (2018) "Kesehatan Reproduksi dan Seksual bagi Calon Pengantin" (Sexual and Reproductive Health for Prospective Bride and Groom). The questionnaire was tested for its reliability and validity. Cronbach's alpha value for the reliability of the knowledge questionnaire was 0.794 and for attitude was 0.797. The p-values obtained through Pearson's product moment correlation test in the knowledge questionnaire validity test ranged from 0.915 to 0.999, while for attitudes they ranged from 0.998 and 1.000. Cut-off values for age, age at marriage and length of marriage were means. Level education of college/university was categorized as high, and junior and high schools as low. Bivariate and multivariate analysis with logistic regression was performed with the help of SPSS 26.0 for windows with a significance level of 0.05.

Research ethics acceptance letter no. 97 / EC / KEPK / FKUA / 2020 was obtained from the Health Research Ethics Commission of the Faculty of Medicine, Airlangga University on April 27, 2020.

RESULTS

Ranges of participants' age was 19 to 34 years old, age at marriage was 18 to 34 years, and length of marriage was 2 to 156 months. Means of respondents' age (24 years), age at marriage (23 years), and length of marriage (9 months) were used as cut-off values for dichotomized data. The highest level of education is masters graduate (1.6%). Level of education was considered as low if it was junior or senior high school and high if it was diploma or bachelor (Table 1).

At the time of interviews, there were no differences in respondents' characteristics (all p values > 0.05). The mean of respondents' score of knowledge (6.78) was used as the cut-off value of dichotomized categories (good and poor). Attitude was categorized as favorable if the T-Score more than mean of T and unfavorable if the T Score less than mean of T. The mean of T-score was 32. Scores of 32 or greater were considered as favorable, while T-scores of less than 32 were considered as unfavorable.

The highest scores of knowledge in control and exposed groups were 3 (7.5% respondents) and 14 (70% respondents), respectively. The highest scores of attitude in control and exposed groups were 14 (35% participants) and 11 (55% participants). The lowest scores of knowledge in control and exposed groups were 37 (92.5% respondents) and 14 (70% respondents), respectively. The lowest scores of attitude in control and exposed groups were 26 (65% participants) and nine (45% participants).

Table 3 shows the frequency distribution of sexual and reproductive health knowledge and attitude

Table1. Respondent Characteristics

Characteristics	Exposed group	Control group	X^2	*p-value*
	n (%)	n (%)		
Age				
≤ 24 years old	16 (80)	17 (42.5)	0.051	0.822
> 24 years	4 (20)	23 (57.5)		
Age at marriage				
≤ 23 years	17 (85)	21 (52.5)	0.065	0.798
> 23 years	3 (15)	19 (47.5)		
Length of marriage				
≤ 9 months	11 (55)	19 (47.5)	1818	0.178
> 9 months	9 (45)	21 (52.5)		
Education				
Low	17 (85)	21 (52.5)	0.065	0.798
High	3 (15)	19 (47.5)		

Table 2. Descriptive Statistics of Knowledge and Attitude

	Minimum	Maximum	Mean	Standard deviation	Median	Mode
Knowledge	3	9	6.78	1.708	7	8
Attitude	29.30	65.80	49.98	9.97	52.70	52.70

Table 3. Frequency Distribution of Sexual and Reproductive Health Knowledge and Attitude among Primigravida.

	Exposed group	Control group	X^2	P values
	n (%)	n (%)		
Knowledge				
Good	6 (30)	3 (7.5)	6	0.014
Poor	14 (70)	37 (92.5)		
Total	20 (100)	40 (100)		
Attitude				
Favorable	11 (55)	14 (35)		
Unfavorable	9 (45)	26 (65)	2.16	0.14
Total	20 (100)	40 (100)		

Table 4. The Effect of Sexual and Reproductive Health Counseling for Prospective Brides, Age, Age at Marriage, Length of Marriage and Education on Knowledge of Primigravidas.

	Unadjusted OR	P-value	Adjusted OR	p-value	95% CI of adjusted OR	
					Lower bound	Upper bound
Premarital counselling	5.286	0.031	8.480	0.036	1.153	62.346
Age	0.120	0.053	0.000	0.999	0.000	.
Age at marriage	0.179	0.117	66281752.37	0.999	0.000	.
Length of marriage	0.769	0.718	0.294	0.228	0.040	2.148
Education	1.143	0.855	0.989	0.989	0.197	4.969
Constant			0.191	0.021		

Table 5. The effect of sexual and reproductive health counseling for prospective brides, age, age at marriage, length of marriage and education on attitude of primigravidas.

	Unadjusted OR	P-value	Adjusted OR	p-value	95% CI of adjusted OR	
					Lower bound	Upper bound
Premarital counseling	3.115	0.045	5.411	0.020	1.311	22.329
Age	0.933	0.895	1.265	0.828	0.153	10.481
Age at marriage	0.952	0.928	1.160	0.894	0.131	10.264
Length of marriage	0.662	0.433	0.321	0.088	0.087	1.187
Education	1.562	0.401	1.326	0.625	0.427	4.121
Constant			0.523	0.206		

among primigravida's. A bivariate test shows that there was a difference of knowledge between the exposed and control groups. However, there was no difference of attitude between both groups.

Table 4 reveals that, after controlling for age, age at marriage, length of marriage and education, those who attended sexual and reproductive health counseling were 8.480 times significantly higher than those who did not to have a better knowledge. As shown in Table 4, all other variables did not influence knowledge (p values > 0.05).

Table 5 shows that those who attended sexual and reproductive health counseling were 5.411 times significantly higher than those who did not to have favorable attitude. As shown in Table 5, all other variables did not influence attitude (p values > 0.05).

Although in bivariate test the attitude did not differ between control and exposed groups (p = 0.14), in multivariate analysis after controlling for age, age at marriage, length of marriage, and education, attitude was influenced by premarital counselling (p= 0.02).

DISCUSSION

Most of the respondents in this study were migrants from outside Surabaya, so it was found that most respondents did not attend sexual and reproductive health counselling when they were prospective brides and grooms, while they attended antenatal care in Surabaya later on. This explains why there were pregnant women in Surabaya who did not get premarital counselling.

Knowledge of reproductive and sexual health among primigravidas

The results showed that most primigravida mothers were in the poor knowledge category, namely 70% in the exposed group and 92.5% in the control group. Poor knowledge about reproductive and sexual health can be caused by educational factors. In the research results, most of the primigravida mothers were in the category of primary and secondary education. Education is an effort to provide insight and knowledge to someone. The level of a person's education also affects the acceptance of information; people with higher education are easier to accept new information (Notoatmodjo, 2014). However, it is not proved in this study. The results of this study are not in line with research at Pucang Sewu Health Center Surabaya (Amalia and Siswantara, 2018) which shows that most respondents (59.3%) have sufficient knowledge, 28.2% have good knowledge, and 12.5% have less knowledge. Amalia and Siswantara's (2018) findings suggest that influence by the existence of sexual and reproductive health education for the prospective bride and groom, the knowledge can be also affected by the level of education, which is not the case in this study. This difference can be caused by different data collection times, where. in the research by Amalia and Siswantara (2018), it was carried out on prospective brides after receiving counseling and in this study it was carried out during primigravida pregnancy.

Attitude toward reproductive and sexual health among primigravidas

The results showed that 55% of primigravida mothers in the exposed group were in the positive attitude category and 65% in the control group in the negative attitude category. According to attitude theory, attitude is an individual's reaction or response to an object (Azwar, 2013). A person's attitude is influenced by several factors, namely personal experience, the influence of others who are considered important, cultural influence, mass media, education, and emotional factors. These factors will influence the attitude of primigravida mothers. The results of this study are in line with Dhamayanti, (2020) which show that the majority of respondents have a positive attitude toward reproductive health as many as 27 (87.1%). Another study by Susanti et al. (2018)showed that the attitude of the majority of respondents toward reproductive health has a positive attitude as many as 29 respondents (76.3%). Differences in sexual and reproductive health attitudes for prospective brides to primigravida mothers can be influenced by several factors, one of which is education (Azwar, 2013). In this study, the highest levels of education were found at the primary and secondary levels, namely 85% of the exposed group and 52.5% of the control group. The higher a person's education, the easier it is to receive information. Conversely, if someone has a low level of education it will hinder the development of attitudes toward receiving information (Irawati, 2018). So it can be concluded that the education level of primigravida mothers can influence how much information is obtained. If the information about pregnancy is good, it can support the attitude of primigravida mothers to carry out actions that refer to mothers in dealing with their pregnancy. The attitude of primigravida mothers in this study can be influenced by education level and age.

The effect of sexual and reproductive health counseling on knowledge and attitudes among primigravidas

There was an influence of reproductive health counseling and knowledge. The OR value of 8.480 indicates that reproductive health counseling improved primigravidas' knowledge. According to the theory of knowledge, knowledge is information obtained by humans from observations using the five senses they have (Notoatmodjo, 2014). The results of this study were supported by Amalia and Siswantara (2018) who explained that there was a relationship to the knowledge of the prospective bride and groom before and after receiving reproductive health education.

There was a relationship between reproductive health counseling and attitudes. The OR value of 5.411 indicates that reproductive health counseling improved primigravidas' attitude. According to attitude theory, attitude is an individual's reaction or response to an object (Azwar, 2013). A person's attitude is influenced by several factors, namely personal experience, the influence of others who are considered important, cultural influence, mass media, education, and emotional factors. These factors will influence the attitude of primigravida mothers. The results of this study are also supported by research by Purwaningsih (2017) which explains that there is a relationship between reproductive health education and attitudes in adolescents. The effectiveness of reproductive health counseling is determined by several factors, including educators, target factors and factors in the health education process. Because the respondent's health education and the process of

health education are the same, the determining factors in this study were the target factors, including the age of the respondent and the information the respondent has obtained (Notoatmodjo, 2007).

The Covid-19 pandemic is happening in Indonesia, including in the city of Surabaya, affecting the data collection process that previously gave the questionnaire directly transferred offline using Google Form. Researchers who were planned to supervise filling out the questionnaire directly at the participants' respective homes were restricted to do so. Therefore, the data obtained may be not as good as planned due to factors that could not be predicted by the researcher.

CONCLUSION

Reproductive and sexual health counseling for future brides improves knowledge and attitude in primigravidas. Premarital sexual and reproductive health counseling for brides should be intensified to improve knowledge and attitude in their future first pregnancy. Studies are needed to measure the effect of primigravidas' knowledge of and attitude toward reproductive and sexual health on the outcome of the pregnancy.

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Original Research

Contributing Factors of Cyberbullying Behavior among Youths During Covid-19

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ABSTRACT

Introduction: The use of information technology during the Covid-19 period is inevitable and can lead to cyberbullying. Mental and life health conditions can be threatened due to being the victim of cyberbullying. This study aims to determine the factors that contribute to the formation of cyberbullying behavior among youths in South Sumatra, Indonesia.

Methods: A cross-sectional study was undertaken. The population was youths in South Sumatra, Indonesia with a total sample of 213 respondents who were determined based on purposive sampling. The data collection was done by distributing questionnaires via Google Forms. The questionnaire was developed based on the concept of cyberbullying behavior inclusive of repetition, power imbalance, deliberation and aggression. The data was analyzed using ANOVA and MANOVA.

Results: In the study, we found that gender contributes the most to shaping cyberbullying behavior (p=0.000), followed by the parent's occupation (p=0.018).

Conclusion: It is necessary to establish an interconnected system between parents, youth groups and the education sector to avoid cyberbullying behavior. The ability of youths to adapt constructively to the increasing advancement of information technology and to use it wisely is something urgent that needs to be observed so then the cyberbullying cycle can be eradicated.

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INTRODUCTION

Covid-19 has had a wide impact on various groups regardless of age, socioeconomic level, education level and gender. The use of online communication tools is an inevitable condition and the youth group is the largest group utilizing the internet or online media in their daily life (Oliveira et al., 2018). The number of internet users in Indonesia has exceeded 200 million, which is more than 75% of the population (Eloksari, 2020). The continuous use of online media with a negative internal motivation can encourage someone to engage in cyberbullying (Cong et al., 2018; Sittichai & Smith, 2015; Swearer & Hymel, 2015). Youths are the largest group of information technology users, so they have the biggest likelihood of being involved in cyberbullying (Grunin et al., 2020; Messias et al., 2014). As a form of psychological disorder, cyberbullying began to occur after the development of traditional bullying into bullying that occurs due to technological improvements (Notar et al., 2013; Ronis & Slaunwhite, 2019). Freedom is a feeling that youths experience when in cyberspace due to the ease of making friends or interacting with many parties. This characteristic is why teenagers are often trapped in the cycle of cyberbullying. Oppression, harassment, humiliation and violence are the consequences that often arise due to the uncontrolled use of communication technology (Chan et al., 2021; López-Castro & Priegue, 2019). It is known that on average, among the 25% of victims of bullying, 10% have experienced being bullied online, in addition to by telephone at nearly 10% and via text message almost exceeding the percentage of 8% (Notar et al., 2013).

Cyberbullying involves bullying through the use of electronic venues such as instant messaging, e-mail, chat rooms, websites, online games, social

networking sites, and text messaging (Wade & Beran, 2011). Furthermore, cyberbullying is an emerging public health concern among youths with established links to physical and mental health problems. Intimidation has been carried out by the cyberbullying perpetrators by utilizing technology in the form of text messages, e-mails, chat rooms, social networking sites, web or online games. Cyberbullying is becoming a global social and school problem. Multiple studies worldwide have reported cyberbullying prevalences among students (Notar et al., 2013; Wade & Beran, 2011). Cyberbullying has continued to escalate unexpectedly to the point of becoming a worldwide problem.

Many studies have tried to explain the causes of cyberbullying. The results of the research by (Baldry et al., 2015; Hellfeldt et al., 2020) show that individual social conditions are associated with cyberbullying and that there is only a slight difference between the victims of bullying in terms of gender. Facebook users report higher rates of extroverts and lower levels of awareness than non-users (Burešová et al., 2015; Sindermann et al., 2020). One indicator of the possibility of being a cyberbullying actor is a lack of empathy for the victims of cyberbullying. (Balakrishnan & Fernandez, 2018; Doane et al., 2014) Bullying is more common among boys than girls (Sharma et al., 2017).

Cyberbullying is generally related to differences in power between the perpetrator and the victim. The victim is the party that has less power, meaning that they are unable to fight the perpetrator (Auemaneekul et al., 2020; Chan et al., 2021). This condition results in the development of serious problems, not only regarding their physical health conditions but also their mental health (Messias et al., 2014; Selkie et al., 2016). Based on (Grunin et al., 2020), due to the use of social media, the victim's social emotional condition is disturbed. The sad condition occurs where only 5.1% have reported cyberbullying, 5% have reported being the victims of bullying and only 9.5% have reported being either the perpetrator or victim of cyberbullying (Hemphill & Heerde, 2014). If cyberbullying is not immediately addressed, it can cause mental health problems. Suicide cases have been reported as a result of cyberbullying (Grunin et al., 2020; Notar et al., 2013) and more than 10% of cases of suicide are due to cyberbullying(Messias et al., 2014). Almost 50% of victims did not report the abuse they experienced and only 10% of victims told their parents about the bullying (Li, 2010).

The physical, psychological, and academic documentation correlates the two types of bullying as they resemble one another (Domínguez-Hernández et al., 2018; Notar et al., 2013). Consistent with the research on traditional bullying, the possible negative effects of cyberbullying were the most pronounced for the cyber-bully/victim participants, especially males. These individuals generally reported experiencing more negative physical, psychological and academic effects due to electronic bullying than those in other groups (Messias et al., 2014; Notar et al., 2013). In order to find the best solution, this study aims to determine the factors that contribute to the formation of cyberbullying behavior among youths in South Sumatra, Indonesia.

MATERIALS AND METHODS

The study used a cross-sectional design, and the research process was ongoing for 6 months from March to August 2020. The population in this study consisted of youths who used online media the most living in the South Sumatra province. The total sample was 213 respondents obtained using the purposive sampling technique. The inclusion criteria were youths aged 15 to 25 years old who use gadgets every day with a willingness to be respondents in the study. Respondents who could not complete join the study and those who did not complete the questionnaire were excluded.

The questionnaire included of age, education level, youth status, residence, gender and the parent's occupation as the independent variables and cyberbullying behavior as the dependent variable. Cyberbullying behavior was categorized into four groups, namely low, moderate, high and very high cyberbullying behavior. The questionnaire used was a modification of the cyberbullying behavior scale developed by (Langos, 2012) which includes repetition, a power imbalance, and deliberate and aggression components. Each component was assessed using 8 statements with a Likert scale (strongly to strongly disagree). The questionnaire consisted of 32 questions (17 favorable and 15 unfavorable statements). Validity and reliability tests were carried out with a Cronbach's alpha score of 0.931.

The data collection process carried out was through the distribution of the Google Form survey through a WhatsApp group. This, in turn, was disseminated to other WhatsApp groups. On the first sheet of the Google Form, the researcher includes the title, research objectives, respondent criteria, informed consent form and rewards. Rewards were given in the form of pulses for the respondents who were willing to be involved in the research. The data was then collected, screened, and compiled for further analysis.

The analysis in the study was assisted by the IBM SPSS 25 software. Furthermore, the data was analyzed using the ANOVA and MANOVA tests with a significance level of 0.05.

Ethical clearance was issued by the Ethics Committee of Politeknik Kesehatan Palembang number: 277/KEPK/Adm2/VI/2020. To ensure the confidentiality of the information submitted, the respondents only needed to write their initials. In addition, the research was not compulsory to engage in, so the respondents were able to resign at any time.of the Faculty of Medicine, Airlangga University on April 27, 2020.

RESULTS

Table 1 shows the diversity of the characteristics of the research respondents. The majority of the respondents were aged 15-18 years old and female with a mostly high school level of education. Most were the oldest child. The respondents predominantly lived with their parents. The majority of the respondent's parents had a permanent occupation. From the results of this study, we found that most respondents experienced low cyberbullying behavior, followed by high cyberbullying behavior.

The ANOVA statistical test shows there is a significant relationship between residence, gender and the parent's occupation with cyberbullying behavior. On the other hand, there is no significant relationship between age, education level and the youth's status with cyberbullying behavior (Table 2). The MANOVA analysis shows that the variables of gender and the parent's occupation are more likely to be linked to cyberbullying behavior (Table 3).

Table 1. Characteristic Respondents (n=213)

Category	n	%
Age		
15-18 years old	134	62.91
19-25 years old	79	37.09
Gender		
Male	70	32.86
Female	143	67.14
Education Level		
Secondary education	3	1.41
High education	210	98.59
Youth status		
The oldest child	85	39.91
The middle child	64	30.05
The youngest child	64	30.05
Residence		
Rent	43	20.19
Live with parents	158	74.18
Live with relatives	12	5.63
Parent's occupation		
Permanent	164	77
Temporary	49	23
Cyberbullying behavior		
Low	77	36.15
Moderate	54	25.35
High	69	32.39
Very high	13	6.10

Table 2. The relationship between the independent variable and the dependent variable

Independent Variables	Model	Sum of Square	Mean Square	F	p
Age	Regression	0.440	0.440	0.474	0.492
	Residual	196.039	0.929		
Education level	Regression	0.022	0.022	0.023	0.879
	Residual	196.457	0.931		
Youth status	Regression	1.377	1.377	1.489	0.224
	Residual	195.102	0.925		
Residence	Regression	3.674	3.674	4.021	0.046
	Residual	192.805	0.914		
Gender	Regression	35.917	35.917	47.200	0.000
	Residual	160.562	0.761		
Parent's occupation	Regression	4.577	4.577	5.033	0.026
	Residual	191.902	0.909		

Table 3. Variables that are most closely related to bullying behavior

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p
Parent's occupation	1.763	3	0.588	3.416	0.018
Gender	9.883	3	3.294	18.553	0.000
Residence	1.649	3	0.550	2.353	0.073
Age	0.335	3	0.112	0.473	0.702
Education Level	0.004	3	0.001	0.088	0.966
Youth status	3.521	3	1.174	1.710	0.166

DISCUSSION

In this study, we found that gender and the parent's occupation result in a greater likelihood of experiencing cyberbullying behavior. There are seven characteristics of cyberbullying consisting of conveying negative information indirectly through electronic applications intended to hurt the victim. It can occur repeatedly with an ongoing impact. The perpetrator can be either an individual or part of a group. The identity of the perpetrator is often hidden and it occurs all of the time (Cong et al., 2018). The use of information technology cannot be separated from the teenagers' lives, especially during the Covid-19 period which requires that everything be done online. This condition provides opportunities for cyberbullying behavior as a behavior that is often engaged in by youths based on certain motivations (Cong et al., 2018; Swearer & Hymel, 2015). the desire to take revenge, to divert their feelings and to make their feelings more comfortable are some of the internal motivations for cyberbullying (Chan et al., 2021; Slaninova et al., 2011). In other words, feelings of frustration and aggression encourage youths to engage in virtual bullying.

In this study, gender was found to be a factor related to cyberbullying behavior. There is a tendency for there to be a difference in the behavior patterns when the youths are female when utilizing technological advances compared to male youths. Several studies have explained that male youths have a higher tendency to bully (Grunin et al., 2020; Wiguna et al., 2018). In this study, the variable of living with their family was one of the drivers of cyberbullying behavior. However, this condition involves a very long process. The previous research (Chan et al., 2021; Paisi-Lazarescu, 2014) explains the relationship between life with their family and the possibility of cyberbullying behavior. This is possible because during the Covid-19 period, there were health protocols that must be adhered to avoid crowds, including staying at home more often. Girls are at a higher risk of committing suicide than boys as a result of being the victim of cyberbullying (Shireen et al., 2014).

The socioeconomic condition of the family in this study was found to be related to cyberbullying behavior. The family socio-economic condition is determined by the family work status and specifically, the parent's occupation. The results of this research reveal that socio-economic conditions have an effect on the increasing number of cyberbullying cases (Grunin et al., 2020; López-Meneses et al., 2020). This can occur because the socioeconomic condition of the family, which can be determined by the amount of family income, affects how the family meets the needs of its family members, including the youths. The ease with which youths obtain the desired facilities encourages character building, particularly among those who always experience ease when getting what they desire. This indirectly contributes to the character building of youths through friendship. Being accustomed to always getting something that they crave in the family encourages youths to get the same treatment in their friendships. When a friend is unable to fulfill this wish, there will be a compulsion of will so then the wish can be fulfilled by the friend. As the characteristics of youths include the freedom to express their will and feelings, they do not have the maturity to anticipate their impact on the resulting behavior (Burešová et al., 2015).

Various studies discussing the effects of cyberbullying in the literature have identified in the form of suicidal ideas and attempts as a symptom of various psychiatric disorders. There is also the emergence of depression and excessive anxiety, including an addiction to illegal substances. These varied conditions lead the perpetrator to intimidate the victim. This condition is very much influenced by the sex (Grunin et al., 2020) and age group of the perpetrator and victim respectively (Burešová et al., 2015). However, in this study, age was not associated with cyberbullying behavior because the majority of respondents were in the same age range.

The incidence of cyberbullying is very much influenced by the environment where the perpetrator is, such as school. It is known that there is a positive effect following the school's involvement in overcoming the suicide attempts of victims due to cyberbullying. It is necessary to establish a psychological support program for the victims of bullying and to enforce strict rules against the perpetrators of bullying. The victims of bullying are weak individuals who are physically and psychologically incapable, socially isolated, always alone, insecure and have low self-confidence. All children can become victims of bullying, and the youths who are victims of bullying commonly have the characteristic of being easily anxious with low self-esteem (Balakrishnan & Fernandez, 2018; Palermiti et al., 2017). Some of the traits of youths who have the potential to become the victims of bullying include isolation and having no friends, easily experiencing anxiety, feeling insecure and being less able to make friends, not having the courage to defend themselves, crying easily, giving up easily, possibly experiencing violence at home and having learning difficulties.

Several limitations have been found in this study. Collecting the data during the Covid-19 pandemic required the researchers to use a Google Form as the researchers could not meet face to face with the respondents. The researchers also did not conduct in-depth interviews related to cyberbullying behavior, which is useful when seeking to further explore the problem of cyberbullying.

CONCLUSION

Youths are a group that is vulnerable to becoming either the perpetrators or victims of cyberbullying. Covid-19 has created a situation where the fulfillment of their daily needs is mostly obtained through cyberspace. Different approaches are needed

regarding males and females when regulating and monitoring the use of information technology so as not to increase the number of victims of bullying through technological advances. It is necessary to create a harmonious atmosphere of togetherness at home, so then the youths can find comfort among their family members. This will allow the emotional atmosphere formed by the youth's psychology to be formed optimally. A massive project is needed that involves their parents, the education sector and the youth's closest environment to develop their mental health condition optimally. The establishment of a cyberbullying prevention project is expected to improve the coping mechanisms of youths today.

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Original Research

Analysis of Factors Affecting the Mental Health Crisis of Coronavirus Disease Infection in Java Island

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ABSTRACT

Introduction: Corona virus disease 2019 (COVID-19) is a health problem that remains a health emergency in the world and causes mental health crisis. The purpose of this study was to analyze the factors that influence the mental health crisis of COVID-19 infection on the island of Java.

Methods: A cross sectional study between June-July 2020 in Java Island, Indonesia with 1.218 respondents selected using convenience sampling. The independent variables were demographic, individual internal, psychological factors and the dependent was mental health crisis. Data were measured by demographic information, knowledge and attitude questionnaires, depression anxiety stress score, the brief 28-item COPE Inventory, questionnaire on problem faces and mental health crisis. Analysis of data is conducted by Chi square and multivariate logistic regression.

Results: The relation of demographic, individual internal and psychological factors were significant to mental health crisis and P <0.05. After adjusted with logistic regression, psychological factors have more significant relation and the highest relation was found in stress level with P = 0.000 and CI 95% was 1.064 – 2.131.

Conclusion: The contributing factor that has the strongest relationship with a mental health crisis is the level of stress that people experience. The biggest contribution that causes disruption of psychological conditions and mental health is psychological factors, which include levels of anxiety, stress, coping mechanisms and problems faced.

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INTRODUCTION

Corona virus disease 2019 (COVID-19) is a health problem that remains a health emergency in the world (WHO, 2020). Treatment due to COVID-19 has not been found and is still in the research stage, it makes COVID-19 still a concern (Hotez, Corry and Bottazzi, 2020; Huang et al., 2020), and affects to the increase in COVID-19 cases (Wang et al., 2020; W.Wu et al., 2020). The very rapid transmission increase in the number of cases has made people around the world worried about the existence of COVID-19 (Huang et al., 2020). This condition happens because of the ease by which the virus is transmitted so that individuals easily fall ill, and some are in critical condition and die (Covaci, 2020). COVID-19, which causes many people to fall ill and also has a high number of cases of death, makes people afraid (Fofana, 2020) and begin to overprotect themselves so that the virus does not spread (Covaci, 2020). Many people show excessive responses such as frequent hand washing, avoiding interactions, suspicious of each other because they are afraid of carrying the virus and discriminating against individuals and families of COVID-19 patients and cases of close contact (Carroll et al., 2020; Dymecka, Gerymski and Machnik-Czerwik, 2020; Nursalam et al., 2020).

The positive incidence of COVID-19 in the world is increasing day by day (Staden, 2020), since December 2019, which was the first-time cases were found in the City of Wuhan, China, and shows an increasing number of cases (Stoecklin et al., 2020). From December 2019 to February 2020, there were around 30 thousand cases of COVID-19, but by July 2020 the

number of COVID-19 cases in the world had reached 16.39 million and in Indonesia it had reached 86,521 (Staden, 2020; WHO, 2020). The total number of deaths has reached 651 thousand cases and 65 thousand patients are hospitalized with critical conditions (Jung et al., 2020). The highest number of cases of COVID-19 is in Java with a proportion of 80% of the total cases in Indonesia (Nursalam et al., 2020). The high number of cases makes people show varied psychological responses, ranging from mild to severe responses (Barzilay et al., 2020; Carroll et al., 2020). Based on research conducted in China on 7,143 students, it showed that as many as 75.1% did not experience symptoms of anxiety, while the proportion of students with mild, moderate, and severe anxiety was 21.3%, 2.7%, and 9%, respectively (Cao et al., 2020; Ying Wang et al., 2020). Meanwhile, based on the research results, people in Italy showed that 31.38% experienced general psychopathological symptoms, 37.19% experienced anxiety and 27.72% showed symptoms of Post-Traumatic Stress Disorder (Maugeri et al., 2020; Pakenham et al., 2020). In Indonesia, the cases of physical problem showed that 60% have mild and asymptomatic symptoms, but in psychological responses showed that 75% people felt anxiety and were afraid during first wave of COVID-19 crisis. This shows that the psychological response faced by a person is also a serious problem that needs to be intervened by all sectors of the response to COVID-19 (Cao et al., 2020; Pakenham et al., 2020).

The psychological impact shown by society is very diverse (Barzilay et al., 2020; Dymecka, Gerymski and Machnik-Czerwik, 2020), many people are really afraid of COVID-19 and many also think that this virus is just a conspiracy and does not exist in the world (Georgiou, Delfabbro and Balzan, 2020). This incorrect assumption makes virus transmission more difficult to control (Fofana, 2020), because people do not want to participate in taking prevention. During the year that COVID-19 became a pandemic, public vigilance was still not 100% (16), such as washing hands (92.7%), maintaining social distancing (92.3%), using face masks (86.5%)), avoiding travel to infected areas or countries (86.9%) and seeking correct information behavior (42.4%). In addition, people who think that COVID-19 is a dangerous and easily transmitted virus at any time will show an exaggerated psychological response (Carroll et al., 2020; Dymecka, Gerymski and Machnik-Czerwik, 2020). The community will show excessive psychosomatic symptoms, resulting in behaviors that are repeated in implementing health protocols (Barzilay et al., 2020; Carroll et al., 2020; Dymecka, Gerymski and Machnik-Czerwik, 2020). The national health emergency that has occurred in Indonesia since March 2020 has made COVID-19 a frightening infection for the community (Fofana et al.,2020). The large number of confirmed cases and deaths due to COVID-19 have created a negative stigma to stay away from anyone who is at risk of transmitting it, health workers who are caring for it (Nursalam et al., 2020). Patients, families of positive patients and patients who have recovered from COVID-19, including the community also rejects the patient's body because they think it can still be contagious (Hotez, Corry and Bottazzi, 2020). Inaccurate information obtained from various media makes people more anxious and excessively anxious, as a result a mental health crisis, psychological impact and community stigma also occur (Covaci, 2020; Dymecka, Gerymski and Machnik-Czerwik, 2020).

Psychological problems found in Indonesian society, including mental health crisis and stigma, must be immediately given further intervention so as not to cause more severe problems (Nursalam et al., 2020). So far, there are still many research that have been implemented in Indonesia that are physical, but psychological factors have not been given much attention, so there are still many who experience anxiety because the information obtained is also inaccurate (Dymecka, Gerymski and Machnik-Czerwik, 2020). Based on previous research about COVID-19, the psychological response that causes crisis condition has not yet been greatly identified, because the pandemic condition makes people need to first adapt to the crisis. The psychological problem has certainly initiated mental health crisis, a condition that causes severe psychological problems and risk factors to mental disorder. Based on the above problems, psychological impacts need to be explored more deeply so that they can produce the most appropriate psychological interventions in dealing with psychological impacts, mental health crisis and social stigma that exist in society. The purpose of this study was to analyze the factors that influence the mental health crisis of COVID-19 infection on the island of Java.

MATERIALS AND METHODS

This research is a cross-sectional study conducted in June-July 2020 in Java Island, Indonesia. The affordable population of this study are people in the community aged 20-54 years who live in Java Island. The selection of research samples used convenience sampling techniques through online and offline media. Assessment of demographic factors, individual internal factors, psychological factors and community mental health crisis was done using a structured questionnaire. Charging is confidential to ensure confidentiality and reliability of data. The research sample was 1218 respondents spread across five provinces in Java Island, namely Jakarta, West Java, Yogyakarta, Central Java and East Java.

This study uses independent variables, namely demographic factors, individual internal factors and psychological factors. Demographic factors consist of location of residence, ethnicity, marital status, income, religion and health status. Individual internal factors consist of age, gender, level of education, knowledge and attitudes. Meanwhile, psychological factors consist of the level of stress, anxiety, coping mechanisms and the problems faced. The dependent

variable of this study is mental health crisis. The research instrument is in the form of a structured questionnaire package which includes asking for demographic information, knowledge and attitude questionnaires from Mohammed Dauda Goni (2018), and depression anxiety stress score (Lovibond and Lovibond, 1995), the brief 28-item COPE Inventory (Carver, 1997), questionnaire on problem faced (Gilhooly et al., 2007) and mental health crisis emergencies questionnaire (Talevi et al., 2020). The entire questionnaire consisted of 5-21 questions using a Likert rating scale of 4 items ranging from 1 (Strongly disagree) to 4 (Strongly agree), so that the total score ranges from 0 to 84. The instrument has conducted initial trials which are well-validated, and has shown a reliability value that is Cronbach's α between 0.875 to 0.995.

Data collection started in June 2020 and online and offline questionnaire were conducted by the researchers. Research beforehand was used to conduct licensing to institutions and to take care of ethical due diligence. Offline data collection was carried out by giving questionnaires to respondents directly. Respondents filled out questionnaires by first giving informed consent without coercion. Online data collection was done via Google Forms and it was ensured that all respondents filled in voluntarily and without coercion. Respondents filled in the questions that have been written; if there were respondents who did not fill in completely, the respondent was considered to be in the drop out criteria and not counted as research respondents. The researcher then collected questionnaires that had been filled in and conducted data recapitulation for further data analysis.

Data analysis was performed using SPSS version 22.0 software to test inferential statistics, namely the Chi square test and logistic regression. Descriptive statistical analysis was conducted to describe the demographic characteristics of the respondents. Bivariate analysis (nonparametric test) with Chi square was used to explore the significant relationship between sample characteristics, individual internal factors, psychological factors and mental health crisis. Statistically significant variables were screened and included in the multivariate logistic regression analysis to identify the most dominant factor of all variables. Estimates of association strength are indicated by odds ratio (OR) with 95% confidence interval (CI), p value is considered significant with value 0.05.

This research has received ethical approval from the Ethics Committee of the Faculty of Nursing, Airlangga University, Indonesia and has received a certificate of ethical acceptance with the number 2038-KEPK. After being given an explanation and instructions regarding the research procedure, all respondents voluntarily gave their consent and participated in the research. This research procedure was in accordance with the provisions of the Declaration of Helsinki on Human participant research.

RESULTS

Based on the results of research conducted in June-July 2020, it was found that the highest demographic characteristics of respondents were domiciled in East Java, as many as 569 respondents (46.7%), with the majority ethnicity being Javanese, with 895 respondents (73.5%). The majority religion was Islam as many as 1139 respondents (93.5%). Respondents who were not married were 813 respondents (66.7%), as many as 376 respondents (30.9%) as students and working as nurses were 240 respondents (19.7%). The majority of the income level is still below the Regional Minimum Wage (UMR), which is as many as 652 respondents (53.5%). In health status, 1122 (92.1%) respondents were healthy and those who were confirmed positive for COVID-19 were 59 (4.8%) respondents (Table 1).

Table 1 describes the variables of individual internal factors, which consist of age, gender, education level, knowledge and attitudes and psychological factor variables consisting of stress levels, anxiety levels, coping mechanisms and problems faced by respondents. Based on the results of the study, it showed that the most respondents were women, as many as 841 (69.0%) respondents, with the most dominant age range late adolescence (17-25 years) as many as 544 (44.7%) respondents and 698 (57, 3%) respondents have a bachelor's level education. The level of knowledge possessed by the respondents showed that the results were mostly good at 867 (71.2%) of respondents, while 869 (71.3) respondents had attitudes in the good category as well. The stress level of the research respondents showed that the highest result was in the normal category, although there were 143 (11.7%) respondents who indicated that the stress category was very heavy. The level of anxiety also shows the results of 538 (44.2%) respondents are in the normal category and the condition of a very high level of anxiety is found quite extensively, namely 288 (23.6%) of respondents. For the coping mechanism shown by respondents, 906 (74.4%) of respondents showed a high ability of the mechanism, while the problems faced by respondents were mostly in the category of moderate problems as many as 874 (71.8%) of respondents. In the mental health crisis, 23.4% of the community showed a response to the crisis, namely the need for counseling services, mental health resolution and experiencing a mental health crisis.

Demographic characteristics of respondents have a significant relationship with the incidence of mental health crisis with all P values <0.005. Based on the location of the respondents who experienced the most mental health crisis in West Java (2.6%), according to the request for counseling needs of the Sundanese ethnic group, this was 19.2%. 11.9% of individuals who are still single also need counseling, while 24.1% of people with a Confucian religion experience a mental health crisis. The occupations that need counseling the most are students (17.3%)

and entrepreneurs (21.1%). Workers who have a source of income below the minimum regional income are also prone to mental health crisis, including people who are often exposed to COVID-19 or at high risk (16.7%) (Table 2).

The internal factors of the individual indicate that age, level of education, knowledge and attitudes have a significant relationship with mental health crisis (all P <0.05). The highest incidence rate of mental health problems was indicated by late adolescence, namely 15.4% needed mental health services, 11.0% needed counseling and 1.8% experienced a mental health crisis. Women are the respondents who experience the most mental problems, at the level of education the higher the risk of mental health crisis. Low public knowledge and attitudes also have the potential for mental health problems (Table 2).

Psychological factors are the highest predisposition for causing mental health problems, based on the X table of individuals with stress levels, anxiety levels, low coping mechanism abilities and facing severe problems shows a greater mental health crisis. The proportion of mental health crisis was mostly experienced by individuals with very severe stress levels (7.7%) and low coping mechanisms (6.3%).

In the multivariate analysis test (Table 3) the factors that had a significant relationship with P <0.05 were age, location, marital status, occupation, educational background, income, knowledge, anxiety levels, stress levels and coping mechanisms. After being adjusted, multivariate analysis was performed using logistic regression with a 95% CI showing that the factor that had the highest association with mental health crisis was stress level (P = 0.000) with CI between 1.064 and 2.131, It shows that stress level influenced mental health crisis more than other factors.

Table 3. Multivariate Analysis in Mental Health Crisis Contributing Factors

Variable	P Value	Odds Ratio (OR)	CI 95%	
			Lower	Upper
Age	0.004*	0.912	0.764	1.089
Gender	0.177	1.162	0.784	1.721
Location	0.000*	0.819	0.710	0.944
Marital Status	0.000*	0.788	0.509	1.219
Ethnics	0.933	1.064	0.918	1.232
Religion	0.255	0.878	0.680	1.135
Occupation	0.008*	1.041	0.978	1.108
Educational Background	0.000*	1.082	0.895	1.307
Income	0.005*	0.825	0.559	1.217
COVID-19 Status	0.974	0.939	0.753	1.170
Knowledge	0.001*	0.578	0.396	0.843
Attitude	0.238	0.494	0.347	0.702
Anxiety Level	0.000*	0.756	0.540	1.058
Stress Level	0.000*	1.506	1.064	2.131
Coping Mechanism	0.000*	0.297	0.177	0.498
Problem Faced	0.869	1.131	0.755	1.693

* Significant Relation P < 0.05

DISCUSSION

Psychological factors are closely related to the causes of mental health crisis, especially the level of stress experienced by individuals (Wu et al., 2020). The important finding of this research was stress level has highest relation with mental health crisis, and some variables, like age, location, marital status, occupation, educational background, income, knowledge, anxiety levels, stress levels and coping mechanisms, too. Significant relation of the results finding indicated that crisis condition has many contributing factors. Based on the research results, data show the level of stress from the community due to the COVID-19 pandemic, which shows the severe and very severe categories are still very high. This is in accordance with research conducted in the U.S., Israel and several other countries showing that the level of stress due to the COVID-19 pandemic is very high in all countries in the world. The results showed that the stress experienced by the community was due to: 1) fear of being infected; 2) many cases of people who died from COVID-19 infection; 3) the situation in the environment is not conducive and the whole community uses masks, suspect each other and always keep their distance; 4) the presence of an infected family member and close contact; 5) asymptomatic positive cases that unknowingly infected others; and 6) the resulting economic impact, causing financial distress (Barzilay et al., 2020; Carroll et al., 2020). The cause which is the main triggering factor is that the information and knowledge received by the community is not quite right. This is also in line with research (Georgiou, Delfabbro and Balzan, 2020) which states that the public believes more in conspiracy theories, so that they think that COVID-19 is just a lie. The behavior of the people who think that COVID-19 does not exist has ultimately made the spike in cases increase (Qiu et al., 2020). As a result, 60% of health workers showed moderate and severe stress responses in one study in China. What makes them stressed is that health workers are ready to be at the forefront, but people do not want to participate positively in joint prevention, so health workers are exhausted because they have to use personal protective equipment every day (WHO, 2020).

Demographic factors also have an impact on the incidence of mental health crisis. The older or younger people have higher response to crisis than optimal age. Females also have higher risk factors for crisis because they always feel very sad whenever they have some problems. The level of education indicated that higher education makes coping mechanism to stress better than less education, likewise those with higher knowledge also have

better response to crisis (Giallonardo et al., 2020), the effects of self-quarantine and social restrictions also cause fear (Dymecka, Gerymski and Machnik-Czerwik, 2020). The results show that mental health crises are prevalent in locations with the most cases of COVID-19 and large-scale social distancing, such as Jakarta (59.7%). Jakarta is the highest location with mental health crisis because of the highest cases and small size of area, so the COVID-19 transmission is fast. A pandemic also hampers various sectors of the economy and education, thus making students and entrepreneurs vulnerable to stress levels and some need counseling (Bonaccorsi et al., 2020; König, Jäger-biela and Glutsch, 2020). This is in line with research conducted in China, where many students experience delays in graduation due to digital adaptation and cannot immediately get a job after graduating (Fernandes, 2020; König, Jäger-biela and Glutsch, 2020). Meanwhile, entrepreneurs experience a financial crisis due to their business being quiet and then closed, unlike entrepreneurs who sell products needed during a pandemic (Ashraf, 2020; Bonaccorsi et al., 2020). Community income tends to decline due to COVID-19 because many are dismissed and work from home, employees then experience burnout and eventually fall into a state of mental health crisis (Zar et al., 2020).

Internal factors of the individual show that age, level of education, knowledge and attitudes are also the cause of the emergence of a mental health crisis (Nursalam et al., 2020). Mental health crises are more likely to occur in vulnerable groups, such as young people, the elderly and women. Some groups with low levels of education and knowledge also have a higher risk. This high risk is caused by insufficient information that can be explored properly, resulting in confusion and fear. Based on research conducted in several countries, it shows that negative responses occur in many groups of people who are too young and too old, because they are not ready for the changes that occur (Boulle et al., no date; Nepomuceno et al., 2020). The level of education also has an effect, people with higher education tend to be easier to provide health education than people who think that conspiracy is the cause of COVID-19 (Georgiou, Delfabbro and Balzan, 2020; Nepomuceno et al., 2020). However, difficulties are experienced by people who are very ignorant of the situation, they do not want to contribute to breaking the chain of transmission (Nursalam et al., 2020). The knowledge and attitudes of the community also show much variation, there are people who are very obedient and obedient to health protocols, there are others who only do so sometimes and some do not care at all. I is very important for health workers to take a promotive and preventive approach (Williamson et al., 2020; Wu et al., 2020; Yenan Wang et al., 2020).

Psychology from society also plays an important role in controlling mental health problems, the level of public anxiety due to the information that is widely circulating raises anxiety and fear, a lot of information is invalid and only makes the situation worse (Boulle et al., no date; Dymecka, Gerymski and Machnik-Czerwik, 2020). As a result, the community stigmatizes individuals who are positive for COVID-19, including their families, and refuses health workers to return home (Bagcchi, 2020; Ramaci et al., 2020). The coping mechanisms shown by health workers are still adaptive; however, many people are saddened to overdo it because family members died of COVID-19 and were buried using strict procedures (Benussi et al., 2020). In addition, many exhibit psychosomatic symptoms and fear of their own psychological problems, which are the main cause of mental health crisis, and which need attention so that they do not get worse.

The limitation of this study is the need to pay attention to several other factors that may have the effect of causing a mental health emergency crisis, including external or environmental factors. The study was conducted by using convenience sampling, so that the sample needed to represent the national level is multicenter. This research was conducted at a time when the crisis conditions due to COVID-19 were very high, so that in the last months of the year it started to return to normal, so that psychological and mental health problems began to adapt to the pandemic. However, this research is strong enough to detect significant impacts, using validated instruments with validity and reliability values according to standards.

CONCLUSION

The contributing factor that has the strongest relationship with a mental health crisis is the level of stress that people experience. The biggest contribution that causes disruption of psychological conditions and mental health is psychological factors, which include levels of anxiety, stress, coping mechanisms and problems faced; these four factors can become precipitative in the COVID-19 pandemic, so it is necessary to give psychological treatment as a form of preparedness.

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Original Research

Family Coping Strategies to Improve the Health of Family Members Living with Schizophrenia

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ABSTRACT

Introduction: Schizophrenia is a serious mental illness that affects the thinking, emotions, relationships, and decision-making. One of the positive effects of treating schizophrenia in patients is family health. The family welfare management strategies provide help for coping, care preparation, organizing meetings, and mentoring. This study focuses on family coping strategies for improving the health of members living with schizophrenia.

Methods: A cross-sectional design was used by choosing 160 respondents randomly. The inclusion criteria were family members accompanying control schizophrenia patients to the Public Health Center, with a minimum age of 18. The independent variable was family coping, which consist of two sub-variables (problem-focused coping mechanism and emotion-focused coping mechanism), while the dependent variable was family health, which consists of three sub-variables (efficient, satisfaction, and happiness). The SMART PLS (2.0 Version) was used to prove the impact of the variables.

Results: The results indicated that family coping had a significant impact on the health of the family. The hypothesis was taken from the value of the T-test on the structural model analysis, which shows T- statistics (13.966) > T-critical (1.96). The impact of family coping on the health is equal to 0.682 (OR). This means that if family coping is given one-unit value, it will increase the family health by 0.682 times.

Conclusion: The implementation of the family coping strategy will improve the capacity of the family to clarify health issues encountered, resolve family behaviors effectively and minimize risk factors. Furthermore, the coping mechanisms chosen by families in facing stress will have an impact on the reduction of illness symptoms in the members with schizophrenia.

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INTRODUCTION

Family caregivers are an important aspect of caring for people with serious mental illnesses, but the needs of those who do it are often not met (Yesufu-Udechuku et al., 2015). Furthermore, the family caregivers who support patients with psychosis frequently have poorer health (Sin et al., 2021). Treating a schizophrenic patient is a source of stress for the family, and there may be external or internal criticism before it affects the family (Byba Melda Suhita, Prima Dewi Kusumawati, & Heri Saputro, 2020). Caring for a patient with mental illness creates a wide range of issues that place a significant burden on family caregivers (Ebrahimi et al., 2018). The data obtained from the Institute for Health Metrics and Evaluation (IHME) show that schizophrenic disorders affect about 1.5 million individuals (0.3%) (OECD/European Union, 2018); 1% of the population in the United Kingdom are also experiencing mental disorders (Smith, 2015). The 2018 RISKESDAS (Basic Health Research) data in Indonesia show an escalation of proportion in the number of households with mental disorders by 7 per mil from 1.7 per mil. Specifically, the East Java Province shows that only 2.2 per mil households experienced mental disorders in 2013 but increased to 5 per mil in 2018 (Riskesdas, 2018). Generally, similar incident rate also occurred

in Ponorogo, with about 1,321 out of 600m336 residents in productive ages experiencing mental disorders (Nasriati, 2017). However, a higher prevalence rate was found in Paringan Village and Dukuh Mirah, where the prevalence rate of mental disorders in Paringan Village was at 11.2 per mil (Mashudi & Widiyahseno, 2016). Decreased family health has effects on patients and relatives.

Various causes of decreased family health of people with schizophrenia include those from within and outside the family. The complexity of the health service system (Gear et al., 2018). and the complexity of the treatment program (Murugappan et al., 2020), are factors that cause poor family health that comes from factors outside the family. Decision-making conflicts (Hamann & Heres, 2019), economic difficulties (Marazziti et al., 2020), and family conflicts (Plessis, Golay, Wilquin, Favrod, & Rexhaj, 2018), are external factors in decreasing family health.

Various ways are used to improve family health, including family coping support (Rayes et al., 2021). care planning support (Nyman et al., 2020), coordinated family discussions (Storm et al., 2020), and family mentoring (Andersen et al., 2020). Based on the family health theory, family coping support is very effective in improving family health (Doornbos, 2002). Furthermore, coping is described as the method of balancing external or internal demands that are perceived to be taxing or exceeding the person's resources, it may be problem-focused or emotion-focused (Grover, Pradyumna, & Chakrabarti, 2015). Choosing the best coping strategy increases mental health (O'Hara et al., 2019). Increases in problem-focused coping were associated with higher levels of wellbeing (De Vibe et al., 2018). There is little research examining family coping in the context of family health.

If an unhealthy caregiver is not treated immediately, it can affect people with schizophrenia. Emotions of family caregivers that often increase will have an impact on increasing the recurrence of schizophrenics (Pardede, Sirait, Riandi, Emanuel, & Ruslan, 2016). Therefore, the optimal caregiver health will support the rehabilitation of people with schizophrenia. Schizophrenics receiving occupational therapy are more appreciated by their families (Sugeng Mashudi et al., 2020).

Studies on the positive outcomes of treating schizophrenia in Indonesia are still rare and one of the positive outcomes of schizophrenia in patients is family health, which is influenced by coping mechanisms (Doornbos, 2007). Study conducted by Çuhadar, Savaş, Ünal, and Gökpınar (2015) strengthens the previous studies, which reported that coping mechanism affects family health. The studies regarding stress and coping mechanisms in family with schizophrenic members show that there is an effect of stress on coping mechanisms (Geriani et al., 2015). Family coping consists of problem-focused coping and emotion-focused coping. Furthermore, it is a cognitive assessment and behavior to manage internal and external needs that exceed ability (Lazarus & Folkman, 1984). The study carried out by Crowe and Lyness (2014) shows that family coping affects family health. A better family coping will increase the level of family health. This study focuses on family coping strategies to improve the family health people living with schizophrenia.

MATERIALS AND METHODS

This study was conducted in Ponorogo Regency, East Java, Indonesia, with a sample of 160 respondents and a cross-sectional design. The data were collected through questionnaires, and the validity and reliability was tested. The respondents were selected by using a random sampling technique from five primary healthcare centers in the North and West Ponorogo. The inclusion criteria included: 1) family members accompanying control schizophrenia patients to the Public Health Center, 2) at least 18 years old. The exclusion criteria included: 1) caregiver suffering from psychiatric or physical disorders that may interfere with patient care and cooperation during data collection, 2) there is more than one schizophrenic patient in the family. Families with schizophrenia that visit the health center according to the inclusion and exclusion criteria that have an odd number are targeted as research respondents. After completing the informed consent of the schizophrenic family of people that filled out the questionnaire prepared by the researcher, after the questionnaire was filled in and submitted to the researcher, the completeness of the answers was checked, if the answers were complete, then as a sign of anchovies, the researcher gave a gift to respondents.

Gender, age, marital status, education, number of family members, occupation, and income are all demographic variables. Family coping variables were compiled based on the Family Coping Questionnaire (FCQ). FCQ is a questionnaire to measure family coping based on Plessis et al. (2018), which has been modified into Indonesian. There are two components, namely the problem of focus coping and emotional focus coping with seven questions. I speak in a harsh or dirty tone to the patient; I will take care of the patient carefully; I share problems about the sufferer's condition with friends/relatives; I get help from people around me; I leave the house temporarily when the patient gets angry; I think of letting the patient suffer a relapse; I think to pray more in such a way that the patient's condition is better. In positive questions, always scores 4, often 3, rarely 2, and never 1, while in negative questions always scores 1, often 2, rarely 3, and never 4. A higher score reflects better family coping. The Cronbach's alpha coefficient for the scale was 0.534.

Family health variables were created based on the indicators of useful, satisfaction, and happiness. The useful questionnaires are arranged based on family assignments (Susanto, Arisandi, Kumakura, Oda, Koike, Tsuda, & Sugama, 2018). There are five

questions: 1) the family is able to know the patient's health problem; 2) the family is able to decide the best course of action for the patient; 3) the family is able to care for the patient well; 4) the family is able to maintain a conducive environment; 5) the family is able to use health facilities for the patient. Each positive item is scored using a 4-point scale (4= always, 3= often, 2= rarely, 1= ever), while for negative questions always scores 1, often 2, rarely 3, and never 4. Satisfaction is measured based on the APGAR family (Takenaka & Ban, 2016). There are four questions, namely: 1) I feel satisfied because my family can adjust to the patient; 2) I feel satisfied because my family is discussing the best solution to solve the problems that befell the patient; 3) I am satisfied because my family shows compassion and responds to patient emotions, such as feelings of anger, suffering, and compassion; 4) I feel satisfied with my family's way of spending time together by involving patient in overcoming problems. The respondents' answers are scored always 4, often 3, rarely 2, and never 1.

The happy indicator is measured based on the Happy Questionnaire (Spears, 2017), with three questions, namely: 1) overall my family feels happy; 2) compared to the family of fellow caregivers with schizophrenia, my family feels happier; 3) the caregiver family with schizophrenia feels happy. They enjoy whatever is going on and get the most out of nurturing. The respondents' answers are scored always 4, often 3, rarely 2, and never 1. A higher score reflects better family health. The Cronbach's alpha coefficient for the scale was 0.883.

Before the statistical analysis, the data were selected based on three standard deviations above or below the average score. Missing values are excluded from the analysis. Descriptive statistics for demographic variables were performed with the SPSS program (Version 22.0, IBM Corp, Armonk, NY, USA). Family coping and family health variables were performed with structural equation models and tested with Mplus (Version 7.4, Muthen & Muthen, Los Angeles, CA, USA). The study of the structural model with a corrected level of confidence (CI) of 95% used 5000 bootstrap samples.

RESULTS

The data used in this study were taken from 160 families of schizophrenia patients who seek treatments in primary healthcare centers located in the North and West Ponorogo. Selected respondents were those who met the criteria of random sampling.

The observation of the study was done in the selected primary healthcare centers. The complete characteristics of caregivers who handle schizophrenia patients can be seen in Table 1.

Table 1 shows that the majority of caregivers are 81 men (50.6%) and 79 women (49.4%). Their average age was 49 (SD = 14.2). Furthermore, 139 respondents are married (86.6%) and 10 single respondents (6.3%). Regarding education level, 102 respondents have completed basic education (24.4%), 39 respondents have achieved secondary education (48.68%), and three respondents have completed tertiary education (1.9%). They worked as farmers (56.2%) with >3 family members (54.4%) and salary less than IDR 1,500,000 (82.5%).

Table 2 explains that the majority of schizophrenia patients are men (59.6%) in the age of 17-45 (81.9%), and siblings of the caregivers (51.8%). The majority of schizophrenics in productive age tend to behave in smoking, even though the effects of nicotine contained in cigarettes affect oocyte maturity (Dwirahayu & Mashudi, 2016).

Table 3 illustrates those coping mechanisms done by the family are dominantly problem-focused coping ($\lambda = 0.915$), whereas family health is determined by the satisfaction level in treating schizophrenia patients ($\lambda = 0.914$). Coping mechanisms have an effect on family health ($\alpha = 0.05$; t-statistics = 14.393).

Table 1. Characteristics of Family Members Living with Schizophrenia in Ponorogo, East Java, Indonesia.

Characteristics	n	%
Gender		
Men	81	50.6
Women	79	49.4
Age (based on central bureau of statistics Republic of Indonesia):		
Productive (18-54)	102	63.8
Not productive (55-80)	58	36.2
Status:		
Married	139	86.8
Single	10	6.3
Widower/widow	11	6.9
Education		
High (Senior High School)	76	74.5
Low (Elementary School, Junior High School)	84	52.5
Job		
Private	47	29.4
Farmer	90	56.2
Others	23	14.4
Family members (number)		
≤ 3	73	45.6
>3	87	54.4
Salary (regional minimum wage in Ponorogo, Indonesia)		
< IDR 1,500,000,-	132	82.5
≥IDR 1,500,000	28	17.5

Table 2: Characteristics of Schizophrenia Patients

Characteristics	n	%
Gender		
Men	95	59.6
Women	65	40.4
Age		
Productive (17-45)	131	81.9
Not productive (46-71)	29	18.1
Relationship with caregiver:		
Son/Daughter	63	39.4
Parent	14	8.8
Others (Siblings)	83	51.8

Table 3: Loading Factors and T-statistical Value.

Variables	Loading (λ)	T-Statistics	T-table
Coping Mechanisms			
Problem-focused Coping	0.915		
Emotion-focused Coping	0.710	14.393	1.96
Family Health			
Useful	0.912		
Satisfaction	0.914		
Happiness	0.873		

DISCUSSION

Family coping significantly impacts family health. This is based on the T-test in the structural model analysis, where T-statistics (13.966) is greater than T-critical (1.96). The effect value of coping mechanisms on family health is 0.682. This means that if family coping is given one-unit value, it will increase family health by 0.682 times.

Family health is measured from the aspects of useful, satisfaction, and happiness. Useful shown by the family may include knowing health problems experienced by patients, choosing the best action to treat patients, maintaining a conducive environment, and utilizing health facilities for patients. Useful indicator (0.912) has the second-highest value in determining family health. Useful throughout the treatment process can be seen when a family could identify patients' health problems, decide the best decision for them, take care of them well, keep a conducive environment, and take advantages of health facilities for the family.

As many as 64.4% of families are satisfied in caring for family members who have schizophrenia. Satisfaction is shown as the family stated that family satisfaction with schizophrenia patient care may be obtained by adapting with patients, discussing the best solution to overcome problems that befall patients, showing affections and responses, such as anger, suffering, and love, and spending time together with patients. The satisfaction indicator (0.914) possesses the highest value in determining family health. Satisfaction throughout the treatment process can be found when a family can adapt, choose the best solution for problems, show affection, respond positively to patients, and spend some time together with patients. Family satisfaction in treating schizophrenia patients cannot be separated from the impact of coping mechanisms (problem-focused coping and emotion-focused coping) done by the family.

Happiness is shown as the family could enjoy the moment of treating patients with schizophrenia compared to other caregivers with schizophrenia patients. Also, they could enjoy everything and obtain optimal treatment for schizophrenia patients. The happiness indicator (0.873) shows the smallest value in determining family health. The decline of happiness in treating schizophrenia patients can be seen when family feels less happy compared to other families with schizophrenia patients and cannot enjoy everything and obtain optimal caregiving. It is related to stress factors, such as the economy, abusive behavior, and stigma that befalls the family. Despite the fact that parents reported being depressed as a result of prejudice, the effects of discrimination have no relationship to their depressive symptoms (Cecilia Ayo´n & Bermudez-Parsai, 2010).

Authors should explore the family health of the respondents, how the culture or finding explain efficiency, satisfaction and happiness, before comparing it with other research; authors could define the real condition in the study setting and finding

Being healthy is defined as an ability to adapt physically, mentally, and socially as a single unit free from illness and disability (WHO, 1948). The characteristics of being healthy according to WHO involve the ability to reflect an individual as a person in internal and external contexts and to involve creativity and productivity. King (1981) stated that being healthy is a form of efficiency, satisfaction, productivity, and happiness (Alligood, 2017). In this study, family health refers to a healthy family (King, 1981). However, the productivity indicator in this study is invalid and unreliable because the submitted questions only focus on attendance, while the respondents of the study are farmers who were unable to attend regularly.

The essential finding of this study is that family coping affects family health. Family Health Theory by Doornbos (2002) shows that coping mechanisms affect family health, whereas this study, in addition to the existing theory, finds family health indicator was measured not only based on family satisfaction, but also family efficiency and happiness. Coping mechanisms chosen by families in facing stress will impact family health (Martínez-Montilla et al., 2017). Caregiver burden had positive correlation with age of caregiver, employment of caregiver and level of education (S Mashudi et al., 2019).

Family coping was related to increased family health in those with impaired attentional function (Morimoto, Furuta, & Kono, 2019). Coping was linked to increased psychological pressure in people who had poor attention management (Tada, 2017). Family coping and family health benefit from compassionate counseling (Buckley, Maayan, & Soares-Weiser, 2017). Antonovsky's sense of coherence influences coping, resulting in increased family happiness (Gassmann et al., 2013). Stress may come from

chronic diseases, such as mental disorders (schizophrenia), addictions, accidents, disabilities, and economic problems. On the other hand, family coping used by families in treating schizophrenia patients are problem-focused coping and emotion-focused coping. Stress in a family with schizophrenia patients can transform the family's life balance. That is why every family needs to have good coping strategies. Caregivers with patients who have mental disorders also need to identify the main stress factor in their family. The best coping strategy is also needed so that family health can improve. Based on the theoretical and empirical studies, it can be inferred that family coping affects family health.

Family coping strategies include observation, counseling, education and cooperation. (PPNI, 2017). An emotional reaction needs to be defined by the nurse (Caqueo-Urízar et al., 2017), Prognosis strain (Fusar-Poli et al., 2020), decision-making (Mandarelli et al., 2018) and expectations of family and family (Knight et al., 2018). Applying the family coping strategy may improve the capacity of the family to clarify experienced health issues, family practices to better resolve health problems, and minimize risk factors. The implementation of family coping can have an impact on reducing the symptoms of disease in family members.

CONCLUSION

This research strengthens the family health theory, and the coping mechanisms carried out by families (problem-focused coping and emotion-focused coping) affect family health. In addition to family satisfaction, the family health can also be measured in terms of useful and happiness. Additional research in needed to find out if patients and treatment factors contribute to family health.

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Original Research

Potential Loss among Infant Feeding Options

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ABSTRACT

Introduction: The conceptual relationship between economics and breastfeeding is still mathematically invaluable, while the family's economic burden increases along with babies born. Indicating potential loss when a family chooses other than breastmilk is a progressive way to manage campaign messages about exclusive breastmilk and prolonged breastfeeding. Descriptive studies are needed to magnify all of these indicators and transform them into measuring instruments generalized to assess family expenditures related to infant feeding.

Methods: This study uses a quantitative descriptive design, questionnaire draft upon qualitative open questions containing all micro indicators impacted financially during the baby's first year. Data collection was carried out in Makassar based on telephone surveys with 330 preliminary samples. After structural analysis and data reduction, the expenditure indicators were divided into medical and non-medical expenses.

Results: The study show there is a difference in the average amount of family expenses of those who provide formula milk compared to breastmilk. This outcome is 21.1 times higher in non-medical components and 2.5 times higher in the medical component. One of the highest contributions in medical expenses is the cost of a recurrent visit to a pediatrician due to a history of illness such as allergies, respiratory infections, and diarrhea.

Conclusion: This empirical fact stated the strong affirmation of how families should consider wisely to choose the best feeding pattern for babies aged 0-12 months.

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INTRODUCTION

Various factor influence the mother's decision to meet the nutritional needs of infants aged 0-12 month (Brown et al., 2014a; Ulak et al., 2012). Despite the undeniable fact that breastmilk is the best choice (Eidelman & Schanler, 2012; Kent, 2007) especially for ages 0-6 months (Chowdhury et al., 2015), there are still many families who fail to fulfill this option (Bascom & Napolitano, 2016; Cato et al., 2017; Ogbo et al., 2017). Termination of breastmilk encourages them to choose formula milk as a substitute. Some of the factors that caused families to choose this option reported from various surveys were low milk production, breast milk did not come out on the first postpartum day, problems with nipples (pain, blisters, sores), breasts (swelling, mastitis), fatigue, work (Brown et al., 2014b; Dennis et al., 2014; Olang et al., 2012; Puapornpong et al., 2017). The reason for working is a trigger for the high use of formula milk (Buccini et al., 2014; Thomas-Jackson et al., 2016). But many mothers who do not work choose formula milk due to several physiological problems in the nipples and breasts (Puapornpong et al., 2017). This nipple problem and fatigue can be overcome with proper breastfeeding techniques by providing the best support system in the mother's environment, such as sharing the caregiver's duties in caring for children (Aubel & Alvarez, 2011; Houghtaling et al., 2018), maintaining hormonal and mental balance to avoid

anxiety (Akman et al., 2008; Douglas & Hiscock, 2010; Nicklas et al., 2013; Susiloretni et al., 2013; Xu et al., 2014). Sometimes there are reasons that the baby is not satisfied with breast milk, so that they cry too much and the mother becomes frustrated to calm them down (Douglas & Hiscock, 2010; Richter & Reck, 2013). Again, this reason can be overcome by increasing the closeness of communication with the fetus during pregnancy through hypnobirthing and initiating early breastfeeding in the first hour of birth to stimulate suction and skin to skin contact (Creedy et al., 2008; Phillips-Moore, 2012).

Although the campaign for milk is intense, especially in developing countries, formula milk companies are ever more creative in marketing their products (Abrahams, 2012; WHO, 2011). They even target gaps in several national policies regulating breastfeeding for babies (Better Work Indonesia, 2004; Gupta et al., 2013). In Indonesia, even though the policy on breastmilk already exists, the achievement rate of giving exclusive breastmilk is still far from the SDG 2030 target (National Population and Family Planning Board (BKKBN), Statistics Indonesia (BPS), Ministry of Health (Kemenkes), 2018). Negative values seem to be normalized by formula milk producers through extraordinary advertisements, causing overestimation, such as completely nutritious food, smarter, stronger, happier babies and so on. Although buying formula milk means more expense, parents think this choice is better quality.

Indications of over expenditure in milk purchasing not only have an impact on higher expenditure, but also have an economic impact in the medium and long term. World Breastfeeding Week 2018 reported that breastfeeding can prevent malnutrition in all forms, ensure food security even in times of crisis, and break the chain of poverty in the long term. Despite the relatively high global initiation rate, only 40% of all infants under 6 months of age are exclusively breastfed and 45% continue to breastfeed until 24 months of age. In addition, there are large variations in state and country breastfeeding rates. Increasing optimal breastfeeding can prevent more than 823,000 children and 20,000 maternal deaths each year. Not breastfeeding is associated with lower intelligence and results in an estimated $ 302 billion in economic losses each year.

However, this figure is just a number if there are no stressor indicators that provoke mothers and families being wiser in choosing formula feeding. Therefore, it is necessary to explore what disadvantages are experienced by families based on their feeding choices for babies.

MATERIALS AND METHODS

This research is a preliminary study, through a quantitative exploratory approach and aims to openly identify indicators related to all affected aspects of the choice of feeding patterns for infants aged 0-12 months. This research was carried out during the January-July 2019 period, in one of the primary healthcare areas in Makassar City which has a moderate density level, various socio demography varieties, and the lowest achievement rate of exclusive breastfeeding in 2018. Determination of research subjects using purposive sampling technique was as many as 330 mothers who were surveyed by telephone. All research subjects were selected based on criteria, having babies aged 0-12 months, willing to be contacted via mobile phone several times according to data collection needs, and willing to be visited at home as one aspect of verifying the validity of the data provided.

The design of measuring instruments was in the form of a questionnaire with open questions from information about the mother's sociodemographic characteristics, the method of feeding the baby, the reasons for choosing this method, the daily consumption of formula milk products, the use of accompanying tools and materials such as bottled water, pacifiers, baby diapers to history of disease and hospitalization that the baby has had in the last three months. All semi-qualitative instruments will be coded and classified quantitatively so that they can be objectively calculated and analyzed. Descriptive data analysis is entirely presented in the form of comparison tables between groups, and the final hypothesis of the study, namely infants fed formula milk has a much greater loss effect than exclusive breastfeeding, which was tested using the Independent T test.

RESULTS

Based on the survey data, after going through the data quantification, they were grouped into two major items, namely medical complaints and non-medical expenses related to the feeding patterns of infants. Non-medical expenses are the accumulated increase in family spending including accessories for baby needs, and the financial needs of purchasing breastmilk replacement products. Medical expenses in the form of health impacts arising from the choice of feeding include health problems experienced by the baby during the last three months.

Table 1 shows that, out of 330, mothers are generally in the reproductive age of 20-35 years, with almost a quarter of the percentage of married young people (<20 years). Generally, mothers have primary to secondary education, the percentage of housewives is more than half of the subjects, with a small percentage of husbands who do not work. Unemployment will aggravate the situation for families to meet the needs of newborns, with data on the percentage of income below 3 million more than half. Most of them had more than two children, with babies under six months exceeding two thirds of the number of subjects; this means that the infants studied were still in the phase of exclusive breastfeeding.

As much as 86.97% of families used disposable diapers, babies who had experienced illness and

Table 1. Subject Characteristic (n=330)

Characteristic	f	%
Mother's Age		
< 20 years	47	14.24
20-35 years	239	72.42
> 35 years	44	13.34
Mother's Marital Age		
< 20 years	97	29.39
≥ 20 years	233	70.61
Mother's Education		
Basic	82	24.84
Middle	131	39.70
High	55	16.67
Graduated	62	18.79
Working profile		
Working Mothers	159	48.18
Housewife	171	51.82
Working profile		
Working Husband	301	91.22
Unemployed Husband	29	8.78
Parity		
Primipara	106	32.12
Multiparous	224	67.89
Babies' Age		
< 6 month	227	68.79
≥ 6 month	103	31.21
Amount of Income		
< IDR 3,000,000,-	177	53.64
≥ IDR 3,000,000,-	153	46.36
Disposable Diaper Used		
Yes	287	86.97
No	43	13.03
Outpatient Period In Last One Year		
Yes	279	84.55
No	51	15.45
Hospitalization Period in Last One Year	97	29.39
Yes	240	72.71
No		
Healthcare Preference		
Primary Healthcare Clinic	208	63.03
Pediatrician	122	36.97
Health Insurance Belongings		
Indonesian Nationals Health	72	21.82
Insurance (BPJS)	62	18.78
Indonesian Health Care	11	3.33
Beneficiary (BPJS-KIS)	32	9.67
Private Insurance		
None		
Feeding Option		
Exclusive Breastfeeding	165	50.0
Formula Feed	165	50.0

outpatient care were 88.55%, hospitalization was 29.39% in the last one year. Generally, families prefer service facilities from primary healthcare clinics, as many as 21.82% are participants of national insurance, 18.78% are beneficiaries, a small proportion (3.33%) have private insurance which is a facility from the workplace, and 9.67% of families do not have health insurance. This will be burdensome for the family's economic condition when there is an unpredictable risk of disease.

Table 2 shows the pattern of formula feeding with several related aspects. The use of formula milk with paper packaging was 84.8%. Many of the reasons cited for choosing a particular brand of formula are because it is suitable for babies; most families who choose this diet prepare a special allocation budget. Some of the accompanying accessories, such as the use of teat media, periodic pacifier changes and the use of bottled water, contribute to formula feeding. This means that choosing formula will add some additional expense items and maintenance of the drinking medium. Also, the resulting effect in the form of waste adds to the environmental burden.

Based on the accumulated results of medical and non-medical expenditures, it can be concluded that the selection of formula milk clearly increases household routine expenditures, because formula milk requires media and materials for manufacture. This study also found empirically the increase in household spending from the medical aspect of formula milk groups. In other words, formula milk has a direct or indirect impact on the health status of the baby. Statistical test in both groups showed significant results.

Based on Table 4, it is shown that the frequency of occurrence of symptoms of allergies, asthma, and dengue fever is more experienced by infants who receive formula milk. Meanwhile, influenza symptoms were equally experienced by the two groups. The frequency of healthy babies was also seen to be higher in the breastfeeding group.

Of the many cases of allergic symptoms, asthma, and flu symptoms, the percentage of babies who had to be hospitalized was higher in the formula milk group. Meanwhile, all cases of dengue fever received inpatient treatment. The identification of health problems in this study was validated by re-verifying the data on patient visits to health facilities mentioned by the mother when experiencing illness events. The identified diagnosis is based on the medical record that is written on the patient's visit report.

DISCUSSION

This study aims to determine and measure the adverse effects of feeding between infants who are exclusively breastfed and formula milk. Several measures were collected regarding the primary needs of infants under one year of age. The gauge identified is the effect of expenditure on food-related needs. The data collected from periodic telephone surveys are then divided into non-health expenditures and health-related expenditures. In the breastfeeding group, the number of non-medical routine expenditures increased from the use of disposable diapers, while, in the formula milk group, non-medical routine expenditures were added with milk, pacifiers, bottled water, and disposable diapers. A must have extra item to this expense formula is sure to cause the family to spend more money (Stuebe et al., 2017).

Table 2. Formula Feeding Pattern (n=165)

Formula Feeding Pattern	n	%
Formula Milk Packaging:		
Cans	25	15.2
Paper Box	140	84.8
Reason for Formula Milk Feeding Choice:		
Suitable for babies	123	74.5
Complete nutrition	38	23.0
Suggested by healthcare nurse/midwife	4	2.5
Financial Specific Allocation for Formula Milk:		
Prepared	106	67.9
Unprepared	50	32.1
Formula Feeding Equipment:		
Pacifier	154	98.7
Other	2	1.3
Pacifier Changed Frequency:		
Regular (every 3 months)	117	75.6
Irregular	37	24.4
Water Consumption:		
Bottled Water	66	42.3
Boiled Water	90	57.7

Table 3. Comparison of Average Family Losses based on Accumulated Non-Medical Economic Impacts (in Indonesian Rupiah)

Family Expenditure	Breastfeeding	Formula Feeding	*p
Non-Medical Expenditure	421,450.0 ± 273,098.6	8,873,569.3 ± 4,012,883.9	<0.001
Medical Expenditure	162,500.0 ± 222,715.6	405,374.1 ± 913,769.3	<0.001
Total Annual Expenditure	578,540.9 ± 245,977.8	9,675,706.4 ± 4,449,391.8	<0.001

Table 4. Illness History

Diagnosis	Breastfeeding		Formula Feeding		Total	
	n	%	n	%	n	%
Respiratory Tract Infection	87	48.6	92	51.4	179	100.0
Asthma	1	0.1	8	99.9	0	100.0
Allergic Symptoms (including diarrhea and vomiting)	1	0.1	38	99.9	39	100.0
Measles	0	0.0	3	100.0	3	100.0
Dengue Fever	1	0.1	7	99.9	8	100.0
Never	75	81.6	17	18.4	92	100.0

Table 5. Hospitalization History (n=165)

Diagnosis	Breastfeeding		Formula Feeding		Total	
	n	%	n	%	n	%
Allergic Symptoms (including diarrhea and vomiting)	1	5.0	19	95.0	20	100.0
Asthma	1	0.0	4	95.0	5	100.0
Respiratory Tract Infection	0	0.0	5	100.0	5	100.0
Dengue Fever	1	0.0	7	95.0	8	100.0
Measles	0	0.0	3	100.0	3	100.0
Never	162	57.1	127	43.9	289	100.0

For the most expenditure identified in this study, we emphasize on medical related expenses. In formula feeding, most babies experience at least one or two episodes of recurrent illness. The hospitalization is also higher in babies who experience an outpatient report. The occurrence of allergic symptoms and asthma was also found higher in formula feed. Allergic related symptoms were reported high in formula (Comberiati et al., 2019; Mathias et al., 2019; Woicka-Kolejwa et al., 2016).

Allergic symptoms were preserved from the use of feeding equipment, such as pacifier, spoon, and bottled feed. Almost all babies are bottle fed, yet 25% found irregular pacifier replacement. This compromised hygiene habit using bottle-feed contributes to a reported risk of food allergy. Pacifier and bottle are normally replaced after two or three months' use to minimize the risk of bacteria exposure. Performing disinfection protocol in all feeding equipment is highly recommend for those who have to choose formula milk. The role of midwife and other clinician related to baby and mother care in educating the proper ways of giving formula determines the outcome of healthy feeding behavior in non-breastmilk baby, especially if the baby is in a condition unable to have breastmilk and direct breastfeeding.

Substantially reported in developed countries, baby birth is a potential target market for formula milk. The formula industry market estimates that it will reach a sales target of $ 70.6 billion by 2019 (Ezeh et al., 2019; Hemmingway et al., 2020). The production process of consumption of formula milk has been confirmed to have a direct impact on global damage, especially climate change, global warming index, environmental degradation, and pollution (Dadhich et al., 2015). Waste generated from packaging and non-biodegradable plastics accumulates, and is burned in open flames or in incinerators, which results in toxic emissions. Meanwhile, direct breastfeeding can eliminate all negative environmental impacts (Leissner & Ryan-Fogarty, 2019). Breastfeeding directly maintains environmental sustainability, is a lifestyle choice with zero waste and zero water footprint (Hamilton, 2015; Linnecar et al., 2014). This study emphasizes the same data, that almost 85% of families use canned formula milk, the rest use paper boxes. This pack will be added every week. Non-recycled duplication by thousands of families using formula milk adds to the accumulation of solid waste. Meanwhile, waste management technology in Indonesia is still lagging behind, and public awareness of zero waste lifestyle is still low. Milk industry from farming, packaging, storing, distribution, and preparation with a large amount of water aggravate the climate change and water scarcity. Therefore, breastfeeding might the smartest decision in ensuring milk supply chain even in crisis situation (FAO, 2019).

In the economic burden, breastfeeding will save three point six billion, this figure is from preventing premature death of around three point one, and reducing the expenditure of traditional medicine by about 0.5 billion. Traditional medical expenses include hospital visits, laboratory tests, and indirect losses on parental income among those who provide formula milk (Weimer, 2001). In low- and middle-income countries, a lower risk of death in the first year was reported among infants who were breastfed, compared with those who were never breastfed (Black & Victora, 2002; Kavle et al., 2017; Straub et al., 2019).

Breastfeeding and Obesity: Study links the components of mother's milk to the growth of her baby (Metzger & McDade, 2010; Papatesta & Iacovidou, 2013) and shows the accumulative loss seen by families is a ratio of 16-17 times greater than direct breastfeeding. This new ratio is measurable and real, not taking into account long-term ratios such as the resulting productive generation. The WBW 2018 report shows that, by not giving baby milk, there is a loss of 2.6 IQ grade (WHO, 2017). A lower IQ means a lower potential in all possible productivity, including achieving a decent standard of living in the future. Ensuring that the baby is exclusively breastfed for the full term means the assurance of a nutritional basis for growing evenly among others. This option prevents them from malnutrition in any form, including the incidence of expulsive stunting (Child malnutrition). Despite all the benefits of breastfeeding mentioned above, only 40% of babies each year receive exclusive breastfeeding for up to six months, and 45% persist for up to two years. Typical failures still revolve around a lack of support from the workplace, community, and health system. Therefore, it takes continuous efforts from all levels to upgrade the scale of the breastfeeding program (Alianmoghaddam et al., 2018; Behzadifar et al., 2019).

CONCLUSION

This study is empirical evidence of the degree of loss experienced by families by giving formula milk. This tangible loss causes the family to experience economic disabilities in the future. This study has not been able to measure intangible losses, such as the impact of potential IQ loss, and the impact of other non-communicable health disorders such as risk of metabolic syndrome, and obesity. Thus, further researchers can devise strategies to fulfill this aspect, in a higher quality longitudinal study.

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Original Research

Nurse Manager Competency Model in a Teaching Hospital

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ABSTRACT

Introduction: Nurse managers in carrying out their duties must have a variety of competencies, one of which is managerial competencies. A model of competency for nurse managers will assist them in shaping their roles as managers in a teaching hospital. This study aims to develop the managerial competency model for nurse managers at the teaching hospital.

Methods: The research design used in this study was action research. This research was conducted with 20 nurse managers who work at inpatient wards of the teaching hospital. Participants were selected by purposive sampling approach and have accepted to participate in the research. The data were obtained by using interview through focus groups discussions. The content analysis method was employed for analyzing the data.

Results: This study found six domains of managerial competencies of nurse managers: 1) provision of patient care (assignment methods, clinical excellence, collaborators, patient safety, evidence-based practice), 2) resource management (personnel management, information and technology management, equipment management, supplies management), 3) leadership (commitment, conflict resolution, negotiator, role model, professional mentor, initiator, motivator), 4) self and staff development (effective communication skills, interpersonal relationship skills, tridharma function of nurses), 5) customer and service orientation (team builder, customer service, quality improvement), and 6) function of preceptorships (basic teaching skills, clinical skills). These 24 fundamental competencies are rooted in caring foundation.

Conclusion: Nurse managers in teaching hospitals should possess a set of managerial competencies to perform their optimal roles in order to achieve the unit goals. This model will provide comprehensive and solid ways for nurse managers to improve their performance. Therefore, the set of nurse manager competencies needs to be standardized across the setting.

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INTRODUCTION

The nurse manager plays a very important role in the management of services in the hospital. These roles can be seen from the daily operational arrangements of the ward to the achievement of the goals of the ward in particular and the goals of the hospital as a larger unit. This is in line with the statement of Furukawa and Cunha (2011) that nurse managers play an important role in health services, especially in hospitals because their duties include administrative duties, providing care and also include education and research areas while remaining focused on the quality of care. The quality of care can be maintained and even improved by nurse managers by creating and enabling excellence in nursing as part of the vital role of the nurse manager (McSherry et al., 20120).

A study conducted by Miri et al. (2014) found that first-line nurse managers have a multidimensional role. This includes three categories related to management principles: planning, organizing, and leadership, with derivatives of seventeen sub-categories. In addition, Miri et al. (2014) also stated that the role of other nurse managers is related to the nursing process and standards of care which consist of three categories: interpersonal contact, information processing and decision making. These

complex roles present a challenge for nurse managers so that they can carry them out in an effective and efficient manner

In real practice in the common hospital, there may be some nurse managers performing their roles poorly. This may be related to a lack of understanding of what a nurse manager's job is or a lack of direct experience leading a ward. Research by Feather and Ebright (2013) conducted at a community-based hospital revealed the perception of staff nurses about the weaknesses of their nurse managers. Staff nurses in Feather and Ebright's study perceived their nurse managers as being task-oriented, for example, attending meetings and scheduling staff, but did not perceive them as staff-oriented who focused on relationships, building teamwork, or identifying employees with the organization. Therefore, it is necessary to have nurse managers who adopt an authentic sustainable leadership approach to facilitate and support frontline staff to make innovation and change (McSherry et al., 2012)

In Indonesia, nurse managers in hospitals have a background with knowledge and practice in nursing management, but few have advanced educational background such as master of nursing administration. The weaknesses in carrying out the roles of nurse manager as found in Feather and Ebright's study may also be found in any hospitals. Therefore, the hospital needs to have a standard about the role and function of nurse managers to become a common reference for both nurse managers, staff nurses, and hospitals in monitoring the implementation of the roles and functions of nurse managers.

Universitas Sumatera Utara Hospital, which is located in Medan city, serves as a teaching hospital. This hospital has been operating for five years and has received the title of full accreditation from the National Hospital Accreditation Commission (KARS). Most of the nurses in this hospital are young nurse generation and still need more advanced experiences in managing nursing services on a ward as nurse managers. In addition, there is no managerial competency model in this hospital that can be used by the nurse managers. With the specific nurse manager competency model which fitted for this hospital, it is hoped that all nurse managers will quickly master this managerial competence and appropriately apply it in their daily work. This study aims to develop the managerial competence model of nurse managers at Universitas Sumatera Utara hospital which serves as teaching hospital.

MATERIALS AND METHODS

The study used an action research approach. Kemmis, McTaggart, and Nixon (2014) explained that, in conducting action research several steps of action are required: reconnaissance, planning, acting and observation, and reflection.

Data collection method used interview through focus group discussions (FGD). Voice recording and field notes were used during FGD implementation. Each FGD lasted around ninety minutes per session. A literature review was also carried out to complement the data obtained from participants. Data analysis used content analysis approach (Polit & Beck, 2018). The content analysis was employed as a guideline to reveal significant statements which were identified later as domain and subdomain of managerial competencies of the nurse managers, as result of codings that were made.

The process of developing the model lasts for two stages: reconnaissance stage and one action research cycle (planning, acting-observing, and reflecting phase). The reconnaissance stage was to obtain data about participant perspectives on existing nurse manager competencies. At this stage, the researchers conducted one session FGD for 90-minute. During the FGD, the head of the ward and the team head were asked about the competence of the nurse manager at the Universitas Sumatera Utara hospital. The competencies are related to nursing management, preceptorship, and leadership. There was no standard of nurse manager competency in this hospital. Therefore, it is necessary to develop a nurse manager competency model at the Universitas Sumatera Utara hospital.

The next stage was for developing a model for nurse manager competency, which consisted of planning, acting-observing, and reflecting phase. The things undertaken by researchers at the planning phase were 1) the socialization of the research program and the data collection results of the reconnaissance stage, 2) planning detailed research action plan, 3) planning the team that would participate in the formulation of the model and 4) formulating required competencies for nurse managers' competencies.

Acting and observing phase was the phase of implementing model development. Activities carried out at this phase were: 1) communication with the nursing committee related to the plan to develop the nurse manager's competency model, and 2) formulation of the nurse competency model. The researcher conducted discussions with various hospital nursing division parties, regarding 1) planning the development of the nurse manager competency model, 2) forming a team to formulate the nurse manager competency model and 3) determining participants during the research process. The first FGD was held on July 18, 2018, with all participants. The results of these discussions were: 1) all the drafting teams understood the research process, 2) the drafting team needed references as model development material, and 3) the drafting team set a meeting to formulate a model to be acceptable and applicable. The second FGD was conducted on August 8, 2018, attended by all participants. The results of the second meeting were the model draft (tentative model) which covers all input from participants and literature reviews and there were nine nurse manager competency domains. The third FGD was conducted on August 31, 2018, and the results of the discussion were: 1) all experts

validated the feasibility of the model, 2) the experts provided input to the model draft based on expertise and experience as a nurse manager in the other hospitals, and 3) there were six competencies domains of nurse manager competencies.

The reflecting phase is the evaluation phase of the action research cycle. This phase was done by one FGD session held on October 2, 2018, attended by all participants. This last FGD was in the model finalization session and it was agreed that there were six domains with 24 managerial competencies for nurse manager competencies in the final model. The evaluation results found that, during the action research cycle, the model formulation process ran smoothly. Models still in draft form were re-conceptualized as intact models.

Credibility refers to confidence in the truth of data (Lincoln & Guba, 1985). Credibility in this study was carried out with prolonged engagement, field notes, triangulation, and member checking. Long involvement was carried out by the researchers with a two-year approach and regular meetings with the participants. Field notes were made by noting situations that occurred during the study. Triangulation was also carried out through data collection from the heads of hospital ward and head of team nurses. Member checking was done by cross-checking the data findings in the form of a matrix of domain and subdomain of managerial competencies to be read by participants to obtain objectivity of the data. Confirmability was carried out by expert checks who validated the model draft. This study was approved by the Health Research Ethics Commission of the Faculty of Nursing, Universitas Sumatera Utara and the researcher also asked the participants' approval with informed consent.

RESULTS

Characteristic of the participants

The participants in this study consisted of 20 nurses who work at the Universitas Sumatera Utara hospital. All participants were in the managerial position with almost similar educational background. The majority participants' age was 30 – 40 years old as much as 85%. All participants were female. All participants were married. Most of the participants had graduated from bachelor nursing program (95%). The majority of participants' length of work was 6–10 years (60%). The characteristic of the participants are illustrated in Table 1.

Table 1. Characteristics of Participants (n=20)

Characteristic	n	%
Age		
<30 Years Old	3	15
30 – 40 Years Old	17	85
Gender		
Female	20	100
Male	0	0
Marital Status		
Married	20	100
Graduated		
Bachelor	19	95
Master	1	5
Length of work experience		
1 – 5 years	7	35
6 – 10 years	12	60
>10 years	1	5

Nurse Manager Competency Model

The results showed that there are six themes as main domains of nurse managerial competences with 24 subthemes as fundamental competencies). These competencies domains are (1) provision of patient care consisting of five competencies (assignment methods, clinical excellence, collaborators, patient safety, evidence-based practice); (2) resource management consisting of four competencies (personnel management, information and technology management, equipment management, supplies management); (3) leadership consisting of seven competencies (commitment, conflict resolution, negotiator, role model, professional mentor, initiator, motivator), (4) self and staff development consisting of three competencies (effective communication skills, interpersonal relationship skills, tridharma function of nurses), (5) customer and service orientation consisting of three competencies (team builder, customer service, quality improvement), and (6) function of preceptorships consisting of two competencies (basic teaching skills and clinical skills). These 24 fundamental competencies are rooted in a caring foundation.

DISCUSSION

The results showed that there were six domains of nurse managerial competence carried out by nurse managers at Universitas Sumatera Utara Hospital: provision of patient care consists of five competencies, resource management consists of four competencies, leadership consists of seven competencies, self and staff development consists of three competencies, customer and service orientation consists of three competencies), and preceptorship function consists of two competencies. Overall, a nurse manager had 24 managerial competencies.

Provision of patient care

The first competency domain that is mastered by nurse managers in this study is the provision of nursing care. This competency domain is a general competency for all front-line managers in the majority of hospitals throughout the world and is useful in managing daily nursing services in the ward. Having this basic competency makes participants more confident in ensuring the completeness of nursing administrative tasks runs smoothly (Mboineki et al., 2019). Providing nursing care to patients is done by using nursing process with systematic stages and applying management concepts.

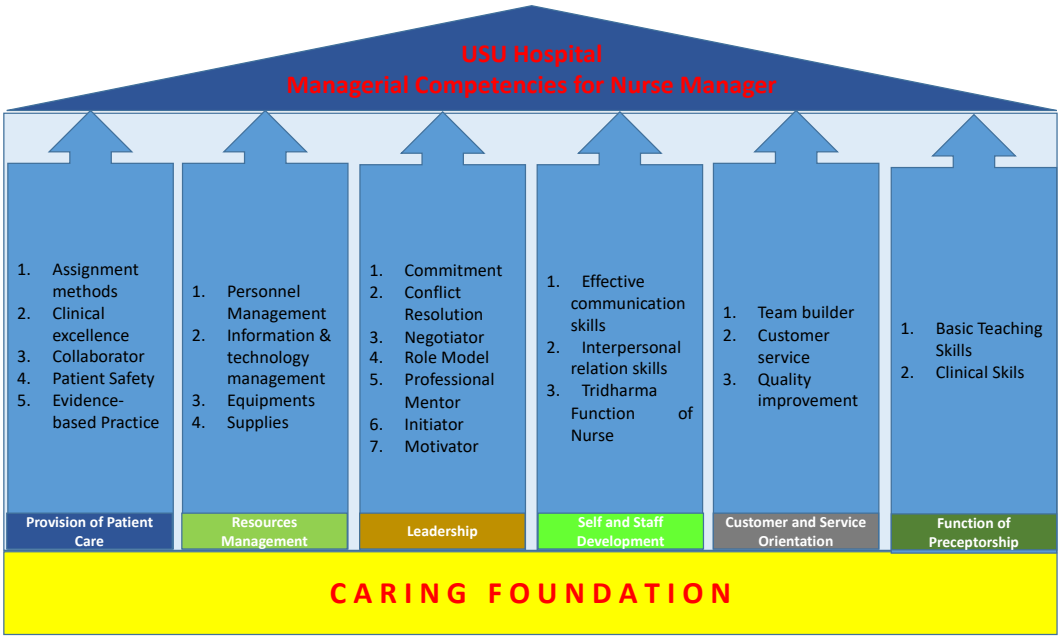

Figure 1. Proposed Nurse Manager Competence Model at Universitas Sumatera Utara Hospital

The nurse manager is required to have detailed knowledge and experience of assignment methods. There are several methods of assignment that a nurse manager can perform on a ward. The selection and implementation of an assignment method that is appropriate to the situation and conditions in a particular ward will affect the effectiveness of providing nursing care in that ward. With the right assignment method, the nurse manager can ensure that the organization and implementation of the care that the nurse will perform can achieve the predetermined goals.

Clinical excellence is a competency that a nurse manager needs to have. This competency is certainly obtained by a nurse through clinical experience as a staff nurse as well as basic and advanced training in accordance with the field of work in their respective work units. By having clinical excellence, a nurse manager can perform management functions that are more primarily related to the leading or directing function.

Collaboration is carried out to improve the quality of nursing care performed to patients. The essence is generally collaboration done clinically. Collaboration is carried out in accordance with scientific disciplines through professional communication effectively between other professions. Collaboration starts from solving problems, making decisions, formulating and implementing nursing care action plans (Elsous, Radawan, & Mohsen, 2017). This competency is very important in organizing all nursing services in each unit with other healthcare workers. With good collaboration skills, a nurse manager works closely with other parties and ensures the achievement of the goals of the organizational unit they lead.

Patient safety is carried out as a guarantee that the patient is safe while being treated in the hospital (Motamedzadeh et al., 2019). Nursing actions are carried out based on the existing evidence base, especially in the field of nursing. The knowledge and skills of a nurse manager regarding patient safety and its implementation in the hospital are very supportive of achieving indicators of success for patient safety. This competence is very important today and in the future because the issue of patient safety is a major issue in the field of health services and is an important domain in hospital accreditation in Indonesia.

Nursing evidence-based practice is an active part of a nursing intervention based on valid evidence of nursing (Chrisman et al., 2014). In providing nursing care , it cannot be separated from the management of nursing care provided. A nurse manager who has this competence will be able to ensure that the nursing care carried out under his/her responsibility is always of the best and following the latest scientific evidence. Nurse compliance to evidence-based practice is the essential key to quality of professional health services. Increased public awareness of the quality of health services provided by health workers to patients causes hospitals to be able to provide services and maintain service quality well so as not to cause other problems (Akhu-Zaheeya, Al-Maaitah, & Bany, 2018).

Resource management

All participants involved in this study believe that they must have competencies related to resource management. These competencies include personnel management, information technology management, equipment management, and supplies management. Planning personnel resources in a hospital must carefully consider both quantity and quality aspects. The process of creating such human resources certainly requires a long process and time. High-quality human resources certainly have high prices (Gunawan & Aungsuroch, 2016). By having personnel

management competence, a nurse manager will be able to manage and empower each nurse to make the optimum contribution in providing nursing services. The nurse manager can also conduct an assessment of the adequacy and suitability of the qualifications of nursing personnel within the scope of their work. In addition, the nurse manager needs to have ability to carry out coaching and in-training program in order to improve the skills and career of each nurse.

Article 12 of the Law of the Republic of Indonesia Number 44 Year 2009 concerning hospital states that a hospital must have permanent staff, including medical and medical supporting staff, nurses, pharmacists, management staff, and non-health personnel. It also mandates that the number and type of human resources must match the type and classification of the hospital. The need for high-quality nurses is obtained by careful planning by the nurse manager. At one time, the knowledge and skills of staff can also be obsolete so that further education and training needs to be carried out on that person (WHO, 2009).

Information technology management is important in the assisting of nurses and nurse managers in performing their activities. The use of technology can replace the manual system in documenting nursing cares such as use of the leadership-endorsed electronic handoffs form (Staggers et al., 2012). Currently, a lot of hospitals have used a hospital information system (SIRS), including nursing care and an integrated service system, in the wards. Having the competence in managing information technology will certainly facilitate the role of nurse managers in monitoring and evaluating the implementation of nursing services in their work units. Equipment management is also considered by participants as an important managerial competency needed by a nurse manager. In the nursing unit, there are various equipment and with a certain amount and sophistication for which they have responsibility of their use and maintenance. These various tools are indispensable to support the provision of nursing care and nursing services in the ward. Consequently, the nurse manager's competence to manage this equipment becomes essential.

Just like equipment management, supplies management is also needed by nurse managers. Routine equipment that is widely used in every ward needs to be properly organized to ensure effective and efficient utilization. With this competency, a nurse manager can ensure that nursing services can run well and ensure cost-effectiveness

Leadership

Nurse managers in this study assume that leadership is a very important competency that they must master. These leadership characteristics include commitment, conflict resolution, negotiators, role models, professional mentors, initiators, and motivators. Commitment is a prerequisite that must be owned by nurse managers. A nurse manager needs a strong commitment to lead the nursing unit or division as his or her own driving force and this commitment can also be passed on to his or her subordinate staff. Conflict resolution is a competence very much needed by a nurse manager because managing a care unit involves many parties: the nurses themselves, patients, administrative staff, and other health workers. The involvement of many parties in caring for patients will certainly create dynamics that can lead to conflict. This conflict must be resolved properly so that the provision of nursing services can take place in accordance with established standards. As a negotiator, nurse managers make efforts to bridge the obstacles that can be faced by nurses with other health workers. Many collaborative activities require negotiation skills so that efforts to achieve patient care goals and care unit goals can run well and in balance. Nurse managers may use their referent power to establish their important roles working in interprofessional collaborative team in healthcare (Orchard et al., 2017). As a leader in the nursing unit or division, a nurse manager should serve as a role model. Leading several nurses who are their subordinates, must entail knowledge, skills, and attitudes that can be emulated by such subordinates. Performance as a role model can strengthen leadership style and allow a nurse manager to be more obeyed and carried out by all orders or agreements that have been made. Nurse managers can be role models with charismatic power when they are capable of integrating their managerial and professional expert knowledge along with their power (Orchard et al., 2017).

Professional mentor is a fundamental competency for a nurse manager in an effort to provide a form of continuing education for both novice and senior nurses. Novice nurses or new nurses need to receive direct education from their leaders in the form of clinical guidance or direction related to managerial aspects. Continuing education for nurses in the wards can be more effective with a direct mentoring process by the nurse manager, in addition to implementing formal education or training that nurses participate in outside the scope of nursing ward. Other important competencies possessed by nurse managers are initiators and motivators. The development of the delivery of nursing services is very dependent on the initiative of the nurse managers. Initiatives can be in the form of ideas or thoughts related to technical updates in the provision of nursing care and also to updating of service management techniques in the ward. As an initiator, the nurse manager will be more creative in producing solutions to the obstacles faced and also adaptive to changing circumstances and technological advances. As a motivator, a nurse manager is required to always be energetic and have a strong spirit. An energetic nurse manager will inspire other nurses to work. Motivation that is conveyed directly to the nurses in daily practice will also have an impact on improving performance. Providing consistent motivation combined with a good role model will

make nurses more motivated and more enthusiastic in carrying out activities to achieve patient care goals and the goals of the nursing as an organizational unit that have been set.

These leadership characteristics are needed to ensure that all nursing duties in the ward will be effectively used by nursing staff. By having these characteristics, nurse managers will gain respect and trust from their nursing staff so that they lead the development of clinical practice in the ward (Pullen, 2016).

Self and staff development

Nurse managers state that other competencies they need to master are related to personal and staff development. This includes effective communication, interpersonal relations, and tri dharma nurse functions. As a leader in their unit, the nurse manager has an important role in developing effective communication between themselves and staff so that they can carry out their duties of nursing care.

Effective communication is a process in which a message is conveyed to a person or group of people. Effective communication is very necessary in nursing and minimizes errors in providing nursing services. Therefore, a nurse manager really needs to have effective communication skills. In carrying out their role as a manager, the nurse always communicates and ensures that the communication which takes place is effective so that messages can be received and acted upon by the staff nurse. In addition, a nurse manager also needs to ensure that the communication with other health professionals is effective so that the nurse's collaboration function runs successfully to achieve patient outcomes. The quality of communication is a vital role in the success of nursing service and nursing care undertaken and nurses are very important in communicating the actions taken (Kourkouta & Papathanasiou, 2014).

Nurse managers are also responsible for enhancing interpersonal relationships skills both between themselves and also with other health workers. The ability to develop good relationships with staff nurses, patients and also other healthcare workers is very helpful in smoothing the efforts of nurse managers in coordinating the delivery of nursing services. Good relations can facilitate overcoming non-technical constraints that occur in the field. The better the interpersonal relationships developed by the nursing team in the unit, the better the quality of services provided to patients (Lee & Doran, 2017). As part of the university, in this study nurse managers must also carry out the *tri dharma* function: providing services, conducting research, and carrying out community services. This tri dharma function is an additional role for nurse managers who work in the USU teaching hospital and characterizes them. The function of service provider is carried out by performing nursing care and nursing service for patients. Research functions can also be carried out by nurse managers at USU hospital and research funding has been provided in the form of Talenta grants supported by the university. Nurse managers can compete for research grants each year. Meanwhile, community service functions can also be carried out by nurse managers together with staff nurses. This community service activity can be in the form of activities that are internal in nature and can also be carried out outside the hospital. Generally, these community service activities are in the form of activities that are directly and indirectly related to the services provided by nurses at the hospital.

Customer and service orientation

There are three nurse manager competencies covered in the customer and service orientation domain: team builder, customer service, and quality improvement. As a team builder, nurse managers must have the ability to build a compact team in the effort to provide nursing services. This competence is important because building a team is very common in an organization. By establishing a compact team, nurse managers will have opportunity to achieve an excellent performance. They must establish a team that can work together in order to achieve the vision and mission of nursing division. The established team has to work effectively and efficiently. The resilience of a team can be seen from the coordination of the leadership and staff awareness that they are an important part of the team (Davis, 2017). Excellent team work will support the realization of good performance from nurses and also depends on the process of how individuals work together to achieve a goal (Lockhart, 2015).

Managerial competence of nurse managers is also related to the ability to implement a customer service approach in nursing services. Knowledge and skills of nurse managers in customer service aspects are expected to improve the quality of service to patients and families. The manager role plays a vital role in encouraging all nurse administrators to apply the principles of customer service in nursing services so that they can improve the quality of hospital services as a whole.

Another important managerial competence of nurse manager is the ability to carry out quality improvement. In addition to requiring the involvement of nurse managers in quality improvement efforts, they also have the ability and innovation in creating new work procedures and processes. Included in this competence is the nurse manager's ability to provide encouragement for the staff nurse to be involved in quality improvement efforts. Therefore, improved quality of services is highly dependent on the performance of nurses. Nurses who display excellent performance will be able to provide the best nursing care and will enhance nursing care (Bruyneel et al., 2015).

Function of preceptorship

The USU Hospital is a teaching hospital. Accordingly, besides providing nursing services to their

customers, the nurse manager also functions as a preceptor for nursing students. The preceptorship function, which includes nurse managers, includes basic teaching skills and clinical skills. The involvement of nurse managers in the clinical learning process of nursing students has the consequence that they must be able to provide supervision to students in conducting nursing procedures using their basic teaching skills. They must also teach the practice of nursing services that they provide to patients and families. In addition, they must be role models both as nurses and as professional managers. Clinical skills are obtained through the implementation of nursing care during their daily practice. These skills are acquired as a career path possessed by nurses.

Through preceptorship process, nursing students, along with the nurse manager as the preceptor, will gain knowledge, skills and others aspects of being a professional nurse. The preceptorship program for undergraduate nursing students aims to shape their roles and responsibilities to be a professional nurse, by taking advantage of opportunities for development of confidence and professional socialization as well as knowledge and skills that must be acquired (Sedgwick & Harris, 2012). The process of socialization of nursing professionalism may occur through observation and modeling the role of behavior in the learning environment (Lai & Lim, 2012). In the implementation of the preceptorship program, the role of a preceptor is very important. A preceptor has a complex role and it requires development of key skills in order to assist students with the reality in the workplace (Ford, Courtney-Pratt, & Fitzgerald, 2013).

Implemented preceptorship by the nurse managers certainly has positive impacts. A study found that an effective preceptorship program reduced turnover by 46.5% and led medication error rate to drop 50-0% by new nurses (Lee et al., 2009). It also influences on the nurse students as candidates for professional nurses so that to ensure competent health professionals, nurses must do so in authentic, unique and often complex situations with conflicting interests and values (Theander et al., 2016).

Finally, to complete all these competencies, nurse managers must have a strong background in caring because this teaching hospital has made caring the basis for their nursing practice. A caring foundation will facilitate nurse managers in creating a caring culture and caring environment, and also in organizing caring activities in their organization (Chen & Liu, 2019).

Overall, the managerial model for nurse manager at USU Hospital has 24 essential competencies. This competency model is expected to be carried out by all nurse managers at USU Hospital. By mastering all the competencies contained in this model, the nurse manager can execute their functions appropriately in achieving their unit goals.

Implication

This managerial model can be applied as a standard for all nurse managers in teaching hospitals, especially USU Hospital by mastering 24 competencies so that all heads of wards as a nurse manager have the same competency and it is easy to lead change and innovate health services, especially nursing in the each ward.

CONCLUSION

The result of this study is a model of managerial competency for nurse managers who work in a teaching hospital. The model consists of six domains with 24 competencies. The existence of this model is very helpful for nurse managers in performing their roles as professional nurse managers. It is recommended that this model could be tested further so that they can be applied more extensively in teaching hospitals in Indonesia.

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Original Research

Exploring the Elderly Care System: A View from Community in Thailand

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ABSTRACT

Introduction: Thai society is becoming an aging society due to the increase of the population aged 60 years or above. Developing the elderly care system in the community is important and needs cooperation from many sectors in order to provide care for the elderly effectively. The objective of this research was to explore the meanings of the elderly care system in community in Thailand, using a qualitative research approach.

Methods: This descriptive qualitative research design was conducted with 40 informants at a community in a province located at the lower northern region of Thailand. The informants were divided into two groups. 1) The main informants were the Chief Executive of the Local Administrative Organization (LAO). 2) The secondary informants were those who had been guided to help the elderly in the community and family. The data were collected by observation, in-depth interviews, focus group discussions and document study. The reliability of the data was verified by triangulation. The data were analyzed by content analysis.

Results: The results of the meanings of the elderly care system in community was defined as five themes: providing help and support, having networks, volunteerism, having knowledge and knowledge management, and community solidarity.

Conclusion: The elderly care system in the community is in line with the participation process of all parties, both inside and outside the area, to jointly conduct activities to deal with problems and develop various operations in the area to support the elderly care system in the community.

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INTRODUCTION

The rapid change in population structure around the world has resulted in the increase of the population aged 60 years and over, both in number and proportion to the total population, while the population of children continues to decline (Srithamrongsawat et al., 2015). It is reported that, by 2050, the number of the elderly will increase to 1,963 million people, accounting for 22% of the total population (Sorakrij, 2016). This is another wave of social change that will cause a greater proportion and number of older people than the younger population (0-14 years) when compared to the proportion of the elderly per total population in 2050 (Opasanant, 2017). Thailand had approximately 5.5 million older people (8%) in 2015 and it will increase to 22 million people (27%) in 2050 (Bureau of Policy and Strategy, Health Ministry of Public Health, Thailand, 2011).

According to the situation of the aging population in the past 10 years in Thailand, the number and the proportion of the population aged 60 years and over increased to 9.2 % in 2000. In 2019, the proportion increased to 17.36% (Ministry of Public Health, Thailand, 2020). This indicates that Thai society is entering an aging society. Developing the elderly care system in the community is important and needs cooperation from many sectors to effectively drive the implementation. Therefore, it is necessary to develop community potential in providing care for the elderly in every aspect, such as policy, mechanism and management. Moreover, the coordination

mechanism at provincial, district or sub-district level must be enhanced (Vattanaamorn, 2012). Healthcare providers at Tambon Health Promoting Hospitals, the first level of public health service system in Thailand, and village health volunteers in the community must be the leaders or a key person in management and provision of healthcare services for the elderly. Organizations in a community and local administrative organizations (LAO) have to provide support to elderly people in the community (Nuntaboot, 2013a; Phinyoo, 2013; Poonthawe, 2017). The operation needs cooperation from local government organizations, health service units, elderly groups and related mechanisms in order to be an effective community center in caring for the elderly. This is also a way to promote and support families, community organizations, as well as the volunteers who care for the elderly in the community through three important strategies, as follows: 1) encouraging the elderly to live without dependence; 2) focusing on disease prevention strategies and appropriate health promotion; and 3) promoting the elderly to have healthy physical and psychological conditions. Therefore, elderly people in a community must be developed and promoted so that they have quality of life and are able to adapt to any changes effectively. Knowledge and experiences of the elderly should be used and preserved as the national treasury to benefit society and the nation. Also, the population of all ages and groups must be prepared to enter the aging society appropriately. The social systems and mechanisms that support people in society to live with stability, happiness and good quality of life must also be created. (National Research Council of Thailand, 2014; National Seniors Council, Aging Funds, Foundation of Thai Gerontology Research and Development Institute; 2012)

The elderly care system in the community makes Thai people in such community continuously increase potential and strength in supporting each other (Nuntaboot , 2010). It is one of factors that are important to wellbeing of the elderly living in the community. Elderly care systems in Thailand have been developed over a long period of time through legislation, regulations, policies, strategies and projects as the national and local level., so that the elderly can be strengthened and live happily in the society (Nuntaboot ,2016). This reflects the care of the elderly connected with the socio-cultural context. In addition, different care potential of the relevant organizations may affect the care system for the elderly in different ways. Therefore, the existing elderly care knowledge of each community does not respond to the problems and the needs of the elderly when the situations and the socio-cultural context change (Nuntaboot, 2016; Phinyoo, 2013; Poonthawe, 2017).

Phetchabun Province, a province in the lower northern region of Thailand, is one of the provinces having many elderly persons. Moreover, the proportion of elderly population has increased rapidly. In addition, the elderly care in this province has been provided by the main organizations in this area, such as family and elderly groups, local government organizations, and healthcare organizations due to recognizing problems and the real needs of the elderly. For this reason, the elderly care system in a sub-district community should respond to problems and needs of the elderly in order to help them live in the family and the community for a long period of time with a good quality of life. The researchers believe in the potential of individuals, groups, and community organizations taking part in elderly healthcare with different care needs, leading to the synthesis to learn about the elderly care system in the community and the health of the elderly according to the socio-cultural context of the area (Opasanant, 2017; Poonthawe, 2017). Therefore, the researchers would like to explore the meaning of the elderly care system in this community from various key informants.

MATERIALS AND METHODS

This was descriptive qualitative research studying a sub-district in Petchaboon Province which is located at the lower northern region of Thailand. This sub-district comprises of nine villages. The data collection was carried out from December 2019 to April 2020. The informants were selected by a purposive sampling method. The informants were 40 people in total, divided into two groups. 1) The main informants were the Chief Executive of the LAO, LAO officers, a principal and teachers of the Elderly School, a registered nurse, public health officers from the Tambon Health Promoting Hospital, community leaders, elderly care volunteers or the village health volunteers, the representative from the elderly club, the strong community leaders, the leaders of social groups, and occupational groups. 2) The secondary informants were those who had been guided to help the elderly, the social group members who had gained assistance, caregivers who were the family members of the elderly, the elderly who received care and the supporters for potential performance such as the staff of Tambon Administrative Organization and the Elderly School.

Data collection was performed by (1) participant observation and non-participant observation by observing the community activities, including physical characteristics, activities, community events, and gathering of people involved in the elderly care; (2) in-depth interviews; (3) focus group discussions with the local leaders, the leaders of community organizations and the volunteers in order to review the information on work and activities involved in caring for the elderly; and (4) documents by studying the available information under the community actions, including population data, civil registration, Thailand community network appraisal program (TCNAP), the reports of Rapid Ethnographic Community Assessment Process (RECAP) and other information available in the community, such as basic necessity information, basic information at the village

level, the information of subsistence allowance, the information of the needy in need of assistance and the health information from the Tambon Health Promoting Hospital.

Data analysis was performed by organizing data, finding out meaning and classifying the components and investigating the relationships of data, leading to the generation of a conclusion that illustrates the findings of this research. This was done through content analysis, typological analysis, matrix tables, rigor and trustworthiness (Phothisita, 2011). Triangulation was employed. The results of the analysis were checked with the key informants, the local government organizations and the health service unit administrators, who knew well about the phenomena in the area of study. This study was certified by the Ethics Committee on Human Research, Naresuan University, IRB Number 0981-62.

RESULTS

The results of reflecting the meanings of the elderly care system in community were interpreted as five themes: help and support, having networks, volunteerism, having knowledge and knowledge management, and community solidarity.

Help and support

In the theme of help and support, the informants conceived the development process of the elderly care system of the sub-district and networks of local government organizations where they live and caused the knowledge in reflecting the self-management of local communities. It was the comprehensive support for social, economic, environmental and health aspects of each area. Moreover, the body of knowledge, including the new knowledge and the knowledge from practice and academic confirmation, was examined by the community. Informants agreed that they are good for elderly care management, which can be developed into a public policy proposal with confirmation from RECAP and TCNAP. There was also the body of knowledge on the basis of helping each other by collecting various knowledge in a systematic manner and disseminating it to the community. In addition, there was the development process to create benefits for self-reliance and support. Some informants stated:

"*In terms of kindness and assistance, we help each other in our sub-district. For example, when nurses have to organize activities for the elderly at the elderly school, they will ask for help from the elderly. All of the elderly help out. This is just one example of the assistance of the elderly in our sub-district."* The Chief Executive of the LAO

"At our village, our relationships are like siblings. We have known each other from parents' generation. We take care of each other like relatives. We know everyone in the village. We help and take care of each other." The village headman

"There are a lot of good and talented people in our community. We need to bring them together to find out the problems and needs and to support the implementation of comprehensive care practices for the elderly in the community and to provide cooperation, help and support each other." The staff of the LAO

"Normally, I do farming. I rarely take care of myself. I have diabetes and high pressure. When I go to the Elderly School, the teachers teach me to take care of myself and other elderly people in the family. I am now taking more care of my health and other elderly people in my family." An elderly person

"At auntie Phon's house, her mother is sick and stays underneath the house. Other elderly people who do not go out to work in the rice fields usually visit and take care of auntie Phon's mother. They take care of and help each other like they are relatives" Village health volunteer

Having social networks

Informants expressed that the elderly care system was a model in using the existing potential in the community and social capital to solve problems, which could truly meet the needs of the elderly in their community. The informants also explained that a lot of social networks of the elderly care system could be built from the care of multidisciplinary team and local government organizations. The networks of local administrative organizations create livable local communities. The system implementation, the management structure and the curriculum structure for opening the Elderly School have been supported. The speakers gave knowledge about the establishment of the Elderly School to many agencies outside the network. The Elderly School was an example of the community elderly care system in building social networks. Some informants expressed as follows:

"I will ask good and talented people who understand the problems to help find out the problems, such as the problem of the increasing number of the elderly. I want to support the comprehensive elderly care approaches to be the practices of our sub-district. I want everyone to help each other to and build an elderly care network together because in the future we must be old." The Chief Executive of the LAO

"We ask for cooperation from local organizations and other organizations having knowledge and experiences in the elderly issues outside the area in order to develop our community and create cooperation. We have different expertise, so we should help develop our sub-district to be the network together." The Principal of the Elderly School

"I am glad that other people visit to see our Elderly School in the sub-district. We can exchange knowledge. Sometimes, the Chief Executive of the LAO takes us to learn from other schools in the network. So, the obtained information can be used for development, making our sub-district strong.

The key is to have friends and networks." An elderly person

Volunteerism

This theme can be divided into three sub-themes. 1) Having positions or roles: This sub-theme refers to the persons with the volunteer positions, appointed by the government agencies, sub-district administrative organization or non-profit private organizations, including village health volunteers, elderly care volunteers, disabled care volunteers and Civil Defense Volunteers. 2) Having volunteer spirit: This refers to those who do things with volunteer or public spirit that will benefit the elderly in the area. These volunteers want to help others to overcome their illnesses and alleviate their suffering. 3) Having opportunities or readiness: This refers to those who have knowledge, skills, and expertise. These people usually give assistance when having opportunities, such as when they are invited by friends and they realize that they are necessary and have specific knowledge and experience in that subject and are ready to work. The informants reported as follows:

"…In the past, I was a normal elderly person, helping the community. During that time, the headman in the area asked the elderly to be the volunteers. Later in 1992, I was trained as a volunteer and was the president of the village health volunteer. In 1995, I was elected by a meeting to be the president of the village health volunteer at the sub- district level. Until now, it is more than 30 years." The president of the village health volunteers

"….I am a village health volunteer because I want to help the community, and have knowledge and experience and use the knowledge to help and take care of myself and my family. I also want the community to be a better health community in all aspects." Village health volunteer

"…We try to look at problems and related matters to find out the information and think about how we can respond to them. In this year, in terms of the elderly issues, we have thought about doing some activities with the elderly. We also have prepared the information of the elderly in the sub-district. We care for all of the elderly in the sub-district. Also, we have searched for disadvantaged elderly people to help." The staff of the LAO

"….After receiving a phone call from the villagers informing that there was heavy rain and it was flooded, I called to ask for coordination from civil defense volunteers. I also called PAO to ask for equipment support such as sandbags. We helped each other in dredging the canal. Many parties and organizations helped each other." The administrator of the LAO

"…After retirement, I saw other people in the community had already worked about funds and the Elderly Club ... My sister invited me to join the club, so I applied for the membership first ... I want to help the community and the elderly who are in trouble." An elderly person

Having knowledge and knowledge management

Research studies have been conducted to create new knowledge coupled with local wisdom. The local community researchers have been supported together with the researchers from educational institutions. Knowledge has been collected in a systematic manner and disseminated to the community. Some informants stated:

"To show that our sub-district has a good elderly care system, we, as a volunteer, must have knowledge about care. Nowadays, there is a lot of knowledge in the internet. But most importantly, we need to have correct knowledge in order to be able to take care of elderly people in our sub-district. We also need to develop our own potential on a regular basis." Village health volunteer

"Local wisdom is the creation of experience until it is crystallized and can be transmitted from generation to generation, representing the knowledge of the people in the sub-district." The folk philosopher

"I am a retired government official. Then, I am a student at the Elderly School in order to develop myself. I help take care of other elderly people in the sub-district. If we have knowledge and potential, we can take care of other elderly people, and our sub-district will have a good elderly care system." An elderly person

Community solidarity

Informants reflected about the integration of people in each village and between the villages. Occupation groups are formed, coexistence rules are established and community unity has been promoted. People in the community have participated in thinking, learning, and practicing together and there is a learning process. The informants expressed as follows:

"The people in the sub-district are supported and empowered. The power of the people in the sub-district is also built. If the villagers are happy, the leaders are also happy too. This is our strength. We have unity in the sub-district." The Chief Executive of the LAO

"Everyone in the sub-district usually helps each other doing activities. They feel like they are the owner of the sub-district. No matter what job or activities, everyone will help each other do them, including Sub-district Administrative Organization, the village headmen, health centers, schools, temples, and villagers." The village headman

DISCUSSION

The results obtained in this study according to community contexts and situation showed that the elderly care system in a community form the informants' viewpoint as (1) providing help and support, (2) having networks, (3) volunteerism, (4)

having knowledge and knowledge management, and (5) community solidarity.

The results of this study reflected the meaning of the elderly care system in terms of help and support as the first theme. It may be possible that the elderly care system of this area obviously received help and support through community participation, collaboration and agreement. The findings demonstrated that the process of elderly care system development by sub-district and local government organization networks was a crucial factor in community knowledge creation and transformation. This provided community in effective self-management and problem solving in elderly care. It drove the accomplishment of elderly care to meet their own basic needs, covering social aspect, economic aspect, infrastructures and health maintenance. It had been previously documented that an elderly care system which was developed by community participation caused formal and informal social groups. These groups had a firm and strong connection with a helping hand within community members (Chankham et al., 2015).

Services and support from a community collaboration led to effective services for elderly revealed as the first theme. For example, 1) the elderly with chronic illness such as hypertension, diabetes or elderly with disability received home care from trained health personnel and the elderly were also informed and advised. 2) The community had a referral system for those who had acute condition. 3) The community also provided many funds to be economic welfare assistance for the elderly.

The second theme, having networks, is consistent with the concept of community participation and the concept of social capital. The elderly care system in this study used networks, which is social capital, to solve the problem, leading to meeting the true needs. This reflects the community power in the decision-making process and setting community mutual goals. (Vattanaamorn, 2012). Moreover, the elderly care system using networks are formed among community members and among villages. (Field, 2018).

Moreover, this community has a famous elderly school, Wang Tha Di Elderly School, as a key component of network development. This school has four networks and 10 elderly care system development networks, and 60 cross-local government organizations cooperation. Wang Ta Di Elderly School team was a mentor for creating 100 elderly schools across Thailand. Therefore, the informants of this study expressed one of the meanings of elderly care system as having networks

Another theme of the results of this study is volunteerism. The informants gave the meanings of volunteerism as formal or governance volunteerism, non-formal volunteerism, and social act or situational volunteerism. Formal or governance volunteerism is the practice from a volunteer who is the government or nongovernment officer, such as a village health volunteer, an elderly care volunteer, and a volunteer caring for people with disabilities. Informal volunteerism refers to the practice of a non-officer volunteer who provides their time and skills without pay to help the elderly suffering from illness or poverty and improving the elderly's basic quality of life (Wongprom, 2015). In this community, non-formal volunteers were the leaders or committees of various funds and welfares. Social act or situational volunteerism were the citizens who had special skills, folk philosophers, or pensioners who needed to participate in their society in a suitable situation. The result in this study is consistent with a study by Kraithaworn (2013) which examined predicting factors. The result revealed that working with local people who you have been familiar with for a long time can improve work efficiency.

The result showed another theme which was having knowledge and knowledge management. The possible reason of this finding might be because this community-based elderly care system generated several benefits associated with knowledge and knowledge management for elderly and younger citizens. The older people indicated that they had exchanged their own knowledge with other generations. Moreover, the elderly informants explained that the Elderly School was a place for lifelong learning for the elderly. They gained more knowledge about health, occupation, and economics, etc. from the school. Moreover, community groups and elderly clubs or occupational clubs was one of the knowledge transferring channels for the elderly. Many activities in elderly care systems were designed for knowledge exchange, such as group discussions between elder people, generations, the community, or discipline, occupation group and excursion. It was not only a place for knowledge transferring, but also a place for freely talking, informing of news and information, or expressing their problems (Srithamrongsawad, 2015). This elderly care system also had indirect results for the elderly's psychological health. The informants felt their self-esteem had been strengthened result from the community recognition and engaging in community opportunity. The elderly's mental health wellness had been raised from social recognition and social position. Some of them had been promoted to be a folk philosopher, a speaker, or a leader. An indigenous knowledge, experiences and folk wisdom, including tacit knowledge, are passed on from one generation to the next generation over decades (Sriphrom, 2013).

One possible explanation of the finding is that Wang Tha Di Sub-District Administrative Organization ameliorated the elderly care system through a knowledge management process. New strategies or technologies had been employed. The elderly care system had been developed through knowledge exchange and transfer. For instance, knowledge about physical therapy for the disability, daily foot checking in elderly with diabetes mellitus, disability care, elderly care, and care of the elderly with chronic disease were operated from caregivers to others through knowledge transfer. Another

method about knowledge sharing employed by Wang Tha Di Sub-District Administrative Organization was research. Research project cooperation between the community organization and university lecturers was launched in order to discover new knowledge in elderly care.

The solidarity among community members and social group is a key of social development in Thai communities, as found as the last theme, particularly in rural areas. The relationship between family members is tight because most Thai families in rural areas are extended families. People in Thai communities are close to each other in various dimensions. It is a major fundamental factor for social welfare. According to the results, social integration via occupation groups, elderly school, and caregivers strengthens social solidarity. Elderly care systems could strengthen community solidarity through providing help and support, volunteering, networks, and community knowledge, in order to diminish elderly problems.

This corresponds to community management process, cooperative learning, and increase in social capital value, under the relationship between citizens and networks, both intra community and intercommunity. So, people must contribute in every process of social activities by using the community real database with the citizen power to develop or solve the community's problem (Phromsuan, 2018).

CONCLUSION

The elderly care systems in the community are in line with the participation process of all parties. It is a way of working that connects groups of related organizations in and outside the area to jointly do activities to deal with problems and develop various operations in the area by utilizing the potential from all parties that are the structures in the sub-district through the life scenarios in the community to support the elderly care system in the community in caring for the elderly in five themes, namely helping and supporting, volunteerism, having networks, having knowledge and knowledge management, and community solidarity. People are satisfied with the integrated work development approaches in developing the elderly care system in their community.

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Original Research

The Effect of Psychoeducation on Self-Efficacy and Motivation for Taking Treatment in Breast Cancer Patients (Ca Mammae)

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ABSTRACT

Introduction: Besides being a physiological problem, breast cancer is also a psychological problem. Breast cancer patients are prone to anxiety, depression, stress, fear, and other psychological problems. Prolonged psychological problems that are not resolved lead to impaired self-confidence and motivation to undergo treatment, which has a negative impact on health. Psychoeducation as a psychological therapy as well as providing education is used as a therapy that aims to overcome the psychological problems of breast cancer patients.

Methods: This study used a quasi-experimental research design. The population in this study was breast cancer patients (ca mammae) at Prof. Dr. Margono Soekardjo Purwokerto. The sample of this study was 50 respondents obtained with purposive sampling technique. The independent variable of this study is psychoeducation and the dependent variables are self-efficacy and motivation. Data were collected using a general self-efficacy questionnaire and intrinsic motivation inventory as well as an observation sheet. Data were analyzed using the Paired T-Test and Independent T-Test statistical tests with a level of significance $\alpha \leq 0.05$.

Results: There was an effect of psychoeducation to self-efficacy and motivation ($p = 0.000$; $p = 0.000$).

Conclusion: This study shows that psychoeducation affects self-efficacy and motivation to undergo treatment in breast cancer patients (ca mammae). Psychoeducation provides information related to breast cancer and stress management methods so that it can increase self-efficacy and motivation to undergo treatment for breast cancer patients.

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INTRODUCTION

Psychological problems in the form of anxiety or depression should not occur in breast cancer patients (ca mammae) because it will have a negative impact on disease progression and adherence to treatment, in addition to greater stress it can lead to the risk of emotional confusion (Wu et al., 2018). Self-efficacy contributes to motivation in a number of ways including breast cancer patients set goals others set for themselves, how much effort they put in, how long they endure adversity, and how resistant they are to failure (Bandura, 1994). The low level of self-efficacy and motivation to undergo treatment is a determining factor in the success of treatment. Self-efficacy in general has a positive relationship with optimism, self-esteem, internal control and motivation and a negative relationship with anxiety, depression, and trauma. Cancer patients who have high self-efficacy can significantly adapt to life changes better than those who have low self-efficacy (Jerusalem & Mittag, 1995 cited in Sanaei et al., 2014). Based on research conducted by Mudigdo and Murti (2016), someone with high self-efficacy will also have an effect on improving the quality of life, role function, emotional function, and social function.

Cancer will become a world health problem until it reaches 22 million cases in 2032 and breast cancer is included in the largest number of cases (Momenimovahed & Salehiniya, 2019). In 2012,

breast cancer was the highest type of cancer, mostly experienced by women, with 1.7 million new cases and an estimated 521,900 deaths (American Cancer Society, 2015). In the United States, the mortality rate for breast cancer sufferers in 2017 was 40,610 patients of all age levels, while the incidence rate of breast cancer was 316,120 sufferers of all age levels (Hodge et al., 2015). In Indonesia, the number of breast cancer cases in 2013 reached 61,682 cases. The percentage of new breast cancer cases was 43.3% and the death rate was 12.9% (Torre et al., 2015). Meanwhile, in Central Java, the number of breast cancer cases in 2013 reached 11,511 with the highest number of cases in Indonesia (Deprtemen Kesehatan Republik Indonesia, 2013). In Banyumas district alone in 2012 there were 133 cases of breast cancer (Dinas Kesehatan Provinsi Jawa Tengah, 2014).

Based on this description, the importance of psychoeducational interventions for the psychological impact of breast cancer patients that have an impact on self-efficacy and increase motivation to undergo treatment in breast cancer patients is needed. With the existence of stages of psychoeducation, including identifying problems (breast cancer), providing knowledge related to breast cancer, and stress management, it is hoped that self-efficacy and motivation to undergo breast cancer treatment will increase.

MATERIALS AND METHODS

Population of this research was patients with breast cancer undergoing chemotherapy in Margono Soekardjo Purwokerto Hospital. The sample of this research was based on inclusion and exclusion criteria. The inclusion criteria consisted of female gender, age range 18-60 years, breast cancer stage I-III. The exclusion criteria in this study were critical patients, and patients with mental disorders. The procedure involved taking informed consent as agreement between researcher and patient. In the first week, the researcher used GSE and motivation instrument to both groups as pretest. In the second week, the researcher conducted psychoeducation to the treatment group. In the third week, the researcher conducted posttest to both groups. The research used a quantitative quasi-experimental research design. The sampling technique used in this study is a non-probability sampling method, namely purposive sampling. Statistical tests used paired T-test and Independent T-Test. The sample size in this study was 50 respondents (25 treatment group, 25 control group).

RESULTS

Demographic characteristics data describe things related to research respondents. There are five variables in the demographic data characteristics of respondents. The description of the distribution of demographic characteristics (Table 1), the results of self-efficacy (Table 2) and motivation (Table 3) are as follows.

Table 1. Characteristics of Breast Cancer Survivors (n=25)

Respondent Characteristics	Treatment	Control
	N (%)	N (%)
Age group(year)		
18-30	1 (2.8)	1 (2.8)
31-40	4 (11.1)	3 (8.3)
41-50	11 (30.6)	12 (33.3)
51-60	9 (25.0)	9 (25.0)
Education		
Primary	15 (41.7)	16 (44.4)
Intermediate	4 (11.1)	5 (13.9)
Secondar	3 (8.3)	3 (8.3)
University	3 (8.3)	1 (2.8)
Marital status		
Single	0 (0.0)	1 (2.8)
Married	22 (61.1)	21 (58.3)
Widowed	3 (8.3)	3 (8.3)
Occupation		16 44.4
Not working	16 (44.4)	1 2.8
Traders	1 (2.8)	1 2.8
Civil servants	3 (8.3)	7 19.4
Others	5 (13.9)	25 100
Stage		
One	2 (5,6)	3 (8.3)
Two	12 (33.3)	12 (33.3)
Three	11 (30.6)	10 (27.8)

In Table 1, demographic data show that breast cancer respondents (ca mammae) in the treatment group are more in the age range 41-50 years (30.6%) as well as in the treatment group (33, 3%). In the treatment group, there is more elementary education (41.7%) as well as the control group (44.4%). In the treatment group those who were married amounted to 61.1% while in the control group it amounted to 58.3%. Respondents in the treatment group and the control group mostly did not work, namely 33.3%, respectively.

Table 2 shows the level of self-efficacy in the treatment group before the intervention was carried out with as many as 12 people in the high category and after the intervention this increased to 15 people. This high category has the largest number of respondents compared to the low and medium categories. Whereas, in the control group, the level of self-efficacy before the intervention with the high category was nine people and after the intervention was 10 people. However, the low category has the highest number of respondents after treatment, namely 13 people. In the paired t-test in the treatment group, the value p = 0.000 was obtained using the critical limit (α)0.05, which means that there is a significant difference between the value of self-efficacy before and after psychoeducation therapy.

Table 3 shows the level of motivation of the treatment group before intervention in the high category as many as nine people and after the intervention this increased to 15 people. However, the medium category in the treatment group was more than the low and high categories, namely as many as 14 people. Whereas in the control group the level of motivation before the intervention with the

Table 2 .The Results of Self-Efficacy Before and After being Given Psychoeducation Therapy in the Treatment and Control Groups of Breast Cancer Patients (Ca Mammae) (n=25).

Self Efficacy (N=50)	Treatment				Control			
	Pre Test		Post Test		Pre Test		Post Test	
	n	%	n	%	n	%	n	%
Low	5	20	0	0	6	24	2	8
Moderate	8	32	10	40	10	40	13	52
High	12	48	15	60	9	36	10	40
Paired T-test	p = 0.000				p = 0.083			
Independent T-Test	p = 0.000							

Table 3. Motivation Results Before and After being Given Psychoeducation Therapy in the Treatment and Control Groups of Breast Cancer Patients (Ca Mammae) (n=25).

Motivation (N=50)	Treatment				Control			
	Pre Test		*Post* Test		*Pre Test*		*Post* Test	
	n	%	n	%	n	%	n	%
Low	7	28	0	0	0	0	0	0
Moderate	9	36	14	56	13	52	14	56
High	9	36	11	44	12	48	11	44
Paired T-test	p = 0.000				p = 0.103			
Independent T-Test	p = 0.000							

high category was 12 people and after the intervention was 11 people. The medium category is the largest category after the intervention with a total of 14 respondents. Paired t-test with critical limits (α) 0.05, in the treatment group after psychoeducation therapy was 0.000, less than 0.05; this means that there is a significant difference between the motivation values before and after psychoeducation therapy. The result of the paired t-test motivation in the control group was p = 0.103 with a critical limit (α) of 0.05; this means that there is no significant difference between the motivation values before and after psychoeducation therapy because the p-value is greater than α.

DISCUSSION

Self-Efficacy

Psychoeducation is effective in improving attitudes because it includes several theories and practices (Lukens & McFarlane, 2004; Snethen & Warman, 2018; Taylor-Rodgers & Batterham, 2014). Psychoeducation is important because it can increase the knowledge and cognitive abilities of clients and families so that it can reduce anxiety or stress (Beshai et al., 2019; Stuart, 2014). The results of the study based on the category of the level of self-efficacy showed that, in the treatment group, it was found that the self-efficacy of undergoing treatment for breast cancer patients, mostly before the intervention (pretest), had high self-efficacy, while after the study, the level of self-efficacy was fixed.

Low levels of self-efficacy can occur before psychoeducation intervention is carried out, because breast cancer patients think that they have little hope of recovery, so they think that treatment is not optimal. This is related to the statement "if I want to try hard, I can solve the problem related to my current illness". Most of the statements in this questionnaire chose to strongly disagree with the reason that most of them had tried various kinds of treatment but the results obtained were not completely satisfactory. Apart from that, in the statement "whatever happens I am ready to handle it", most of the respondents strongly disagree because they think that they are not ready to accept the harsh reality that will happen to them someday. After the psychoeducation intervention was carried out, agreement as to the statement "if I want to try hard, I can solve the problem related to my current illness" is proven by their statement that they will undertake alternative medicine. In the statement "whatever happens, I am ready to handle it", most of the respondents chose to answer disagree, they are still adapting to current cancer conditions.

The increasing level of self-efficacy is also influenced by the information obtained through psychoeducation (Reins et al., 2019; Shah et al., 2014). This statement is evidenced by the results of the posttest in the treatment group after being given psychoeducation intervention, which shows that the level of self-efficacy is increasing. This also shows that psychoeducation intervention has an effect on self-efficacy.

Motivation

In this study, the motivation to undergo breast cancer treatment in general showed a change, namely the treatment group showed an increase in respondents who had a motivation level for treatment as indicated by the percentage of the mean value after the posttest. Psychoeducation is a combination of psychotherapy

and educational interventions (Anchan & Janardhana, 2020; Hudak & Gallo, 2010; Petre et al., 2021) by looking at potential threats or life development and explaining individual coping strategies to adapt critically in the patient's life, namely through education or what is called psychoeducation (Brown, 2011). Psychoeducation is important because it can affect a person's psychology and have a big effect on the ability to respond (Abedini et al., 2020; Alvidrez et al., 2005).

Researchers argue that psychoeducation is an extrinsic motivation that comes from research. Researchers provide information related to breast cancer and teach how to manage stress. Researchers are said to be the source of increased extrinsic motivation because they are one of the external factors forming motivation.

The level of motivation before and after the psychoeducation intervention was different. The existence of this difference is based on the statement of respondents who mostly chose to strongly disagree before the intervention was carried out, namely the statement "I believe cancer treatment is beneficial for me" and the statement "I feel happy if I do cancer treatment and feel close to cancer treatment" (Barnes et al., 2018; Gür et al., 2017). Respondents thought that taking medication would waste a lot of money while the amount of money needed was so great and they themselves were still experiencing economic difficulties. After a psychoeducational intervention, the statement "I believe cancer treatment is beneficial for me" was agreed.

CONCLUSION

The conclusion of the research regarding the effect of psychoeducation on self-efficacy and motivation to undergo treatment in breast cancer patients (ca mammae) is that the level of self-efficacy pre and post psychoeducation intervention in breast cancer patients (ca mammae) shows a significant difference between treatment groups and control, or, in other words, psychoeducation can increase self-efficacy in undergoing treatment in breast cancer patients.

The pre and post motivation level of psychoeducation intervention in breast cancer patients (ca mammae) showed a significant difference between the treatment group and the control group, or in other words, psychoeducation could increase motivation to undergo treatment in breast cancer patients.

Healthcare professionals should be more aware of the psychology of patients within this group of breast cancer patients in order to meet their needs.

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MATERIALS AND METHODS (Times New Roman 11)

Explain in detail about the research design, settings, time frame, variables, population, samples, sampling, instruments, data analysis, and information of ethical clearance fit test.

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Result should be presented continuously start from main result until supporting results. Unit of measurement used should follow the prevailing international system. It also allowed to present diagram, table, picture, and graphic followed by narration of them.

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Equation:

$$\mathbf{H}' = -\sum_{i=1}^{s}(P_i)(\log_2 P_i) \quad \text{..... (1)}$$

Remarks: .....

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Table 1. Effects of plant growth regulator types and concentrations on embryogenic callus induction from leaf tip explants of *D. lowii* cultured in ½ MS medium supplemented with 2.0 % (w/v) sucrose under continuous darkness at temperature of 25 ± 2 °C after 60 days of culture

Table 3. Maternal and child health care-seeking behaviour for the last pregnancy in women aged 15 – 45 years old

Type of care	Age Groups (Years)							
	<30		30 - 39		40 - 45		All Age	
	n	%	n	%	n	%	n	%
Place for antenatal care								
Village level service (Posyandu, Polindes or Poskesdes)	1	9.1	1	4.6	1	3.5	3	4.8
District Level service (Puskesmas/Pustu)	2	18.2	7	31.8	1	3.5	10	16.1
Hospital, Clinics, Private Doctor or OBGYN	1	9.1	4	18.2	2	6.9	7	11.3
Private Midwife	7	63.6	10	45.5	25	86.2	42	67.7
Place of Birth								
Hospital	5	50.0	5	22.7	4	13.8	14	23.0
Birth Clinic/Clinic/Private health professional	5	50.0	15	68.2	21	72.4	41	67.2
Puskesmas or Pustu	0	0.0	2	9.1	0	0	2	3.3
Home or other place	0	0.0	0	0	4	13.8	4	6.6
Ever breastmilk								
No	1	9.1	1	4.6	1	3.5	3	4.8
Yes	10	90.9	21	95.5	28	96.6	59	95.2
Exclusive breastfeeding								
No	4	36.4	10	45.5	18	62.1	32	51.6
Yes	7	63.6	12	54.6	11	37.9	30	48.4

DISCUSSION (Times New Roman 11)

Describe the significance of your findings. Consider the most important part of your paper. Do not be verbose or repetitive, be concise and make your points clearly. Follow a logical stream of thought; in general, interpret and discuss the significance of your findings in the same sequence you described them in your results section. Use the present verb tense, especially for established facts; however, refer to specific works or prior studies in the past tense. If needed, use subheadings to help organize your discussion or to categorize your interpretations into themes. The content of the discussion section includes: the explanation of results, references to previous research, deduction, and hypothesis.

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CONCLUSIONS (Times New Roman 11)

Conclusion should be explained clearly related to hypothesis and new findings. Suggestion might be added contains a recommendation on the research done or an input that can be used directly by consumer.

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The author-year notation system is required and completed. All reference mentioned should be written down in reference using **Harvard Cite Them Right 10th Edition** style and arranged from A to Z. Articles have minimal 25 recent references (last 10 years) and 80% is journal. References from journal publication should be provided by DOI. **All cited references must be mentioned in in-text citation.** If you are Mendeley user, please download the reference style here **https://www.mendeley.com/guides/harvard-citation-guide**

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Reference to a Journal Publication:
Efendi, F., Chen, C. M., Nursalam, N., Indarwati, R., & Ulfiana, E. (2016). Lived experience of Indonesian nurses in Japan: A phenomenological study. Japan Journal Nursing Science, 13(2), 284-293. doi:10.1111/jjns.12108

Reference to a Book:
Kurniati, & Efendi, F. (2013). Human Resources for Health Country Profile of Indonesia. New Delhi: WHO South-East Asia Region.

Reference to a Website:
MoH. (2013). Sosialisasi Global Code of Practice on The International Recruitment of Health Personnel [Dissemination Global Code of Practice on The International Recruitment of Health Personnel]. Retrieved December 2, 2014, from http://bppsdmk.depkes.go.id/tkki/data/uploads/docs/workshop-sosialisasi-gcp.pdf

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Nursalam, Efendi, F., Dang, L. T. N., & Arief, Y. S. (2009). Nursing Education in Indonesia: Todays and Future Role. Paper presented at the Shanghai International Conference, Shanghai.

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