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Family's Experience: Nursing Care for Colorectal Cancer Patients with Colostomy

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ABSTRACT

Background: Colorectal cancer patients with colostomy have various complaints about changes in their life, including the need for comprehensive and personal care. Ostomy nurses are responsible for managing people with a colostomy, and this particular nursing practice continues to develop globally. Also, previous literature highlights the importance of caregiver's support, particularly family in colostomy patient care.
Purpose: This study aimed to explore the family experience of colorectal cancer patients toward colostomy nursing care
Methods: The study design used was descriptive phenomenology to explore the experience of ten participants through in-depth interviews The participants were selected using purposive sampling with the inclusion criteria: family members of colorectal cancer patients with colostomy, over 21 years old, and able to communicate verbally. The data were analyzed using Colaizzi's method.
Results: The results revealed three themes related to the family's experience: (1) positive and negative behavior in nursing care, (2) living with a colostomy, and (3) expectations for nursing care. The findings showed that the families were happy with the ostomy nursing care though some aspects need to be improved. However, colorectal cancer patients experienced some difficulties in living with a colostomy.
Conclusion: The study concluded that the colostomy nursing care still needs to be improved. This study recommends the ostomy nurses to improve their nursing care, especially in terms of skills, responsiveness, and awareness.

Keywords: Colostomy; family experience; nursing care; colorectal cancer patients.

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BACKGROUND

Colorectal cancer is one of the predominant cancers in the world. In 2018, this cancer reached 16,000 deaths across Indonesia (WHO, 2018). Several studies stated that the increase in colorectal malignancies significantly contributes to an increase in ostomy procedure, leading to various effects on health-related quality of life (HRQOL) (Barreto

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& Valencia, 2013; Dabirian, Yaghmaei, Rassouli & Tafreshi, 2011). Nurses are health care providers who have an important role in caring for patients with colostomy, particularly in identifying their needs, preventing complications, and improving quality of life (Adriana, 2010).

Danielsen, Soerensen, Burcharth, and Rosenberg (2013) stated that ostomy nurses are responsible for managing persons with a stoma, and this specialty nursing practice continues to evolve on a global basis. Ostomy nurses should be able to provide nursing care not only on physiological problems but also other problems related to the ostomy. Vonk-Klaassen, de Vocht, den Ouden, Eddes, and Schuurmans (2016), in their review, identify some problems related to an ostomy. The problems include sexual problems, depressive feelings, gas, constipation, dissatisfaction with appearance, changes in clothing, travel difficulties, feeling tired, and worry about noises. Thus, comprehensive and personalized nursing care is important in order to prevent or manage complications and improve the physiological and psychosocial adjustments to ostomy patients (Klingman, 2009). As a result, it will enhance the patients' quality of life.

Living with colostomy causes negative impacts on the overall quality of life of the patients (Von-Klaassen et al., 2016). This will affect their family or caregiver in providing support. Caregiving is often a multi-faceted endeavor that can entail both instrumental and affective support (Dumont, Jacobs, Turcotte, Anderson & Harel, 2010). Several studies found that over the past decade, the cancer caregiving literature has grown as patients' and partners' needs and quality of life (QoL) have become a focus of concern (Berry, Dalwadi, & Jacobson, 2016; Bevans & Sternberg, 2012; Hawyer, Van, Wilson, & Griffin, 2016). Existing research recognizes problems with collaboration between the hospice major barrier in delivering high-quality care for patients in the nursing home (Hwang, Teno, Clark, Shield, Williams, Casarett, & Spence, 2014). However, little evidence was found related to the experience of a family on colorectal cancer-related ostomy nursing care in the hospital setting. Therefore, it is fundamental to understand the habits, perceptions, and attitudes, feelings, and emotions demonstrated in the most diverse situations across the patients while trying to understand those who accompany and sustain them in a patient's life-changing experience.

PURPOSE

This study aimed to analyze the family's experience of colorectal cancer related to colostomy nursing care in the hospital.

METHODS

Research design

This study used a qualitative research method with a descriptive phenomenological approach. This approach, which seeks to describe lived-experience, tries to find the essence of these phenomena by remaining open to the meanings associated with those who have experienced them (Polit & Beck, 2010).

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Setting and participants

This study was carried out in a hospital in Semarang, Central Java, Indonesia. The selection of the subject of this study was carried out using purposive or judgmental sampling techniques, which was taking samples with certain considerations (Soegiono, 2011). The participants were the family members of colostomy patients due to colorectal cancer in inpatient units, which met the inclusion criteria. In this study, the inclusion criteria were patients who were able to communicate verbally, cooperative, and over 21 years old. As many as ten patient's families participated in this study according to the point of data saturation.

Data collection

Persons who agreed to participate in the study signed the free and informed consent form after receiving detailed explanations of the proposed objectives and procedures. All participants were recruited in the hospital. Permission to audiotape the interview session was also sought from each participant. Confidentiality and anonymity were also guaranteed. Data collection was conducted by semi-structured interviews and asking the question to get deep information about their experiences recorded by voice recording. The time and place of the interview were arranged in a calm environment within the hospitals, which were according to the participant's preferences. Each interview lasted for about 30-60 minutes. Data collection continued to the point of saturated data, where no new information was obtained, and redundancy was achieved.

Data analysis

The initial stage of data analysis was carried out by documenting the results of the interview in the form of interview transcripts. This process was carried out by playing the recording repeatedly. Verbatim transcription was then done to all interview recordings, and the data were grouped into the form of themes, sub-themes, and main categories. Analysis of the data in this study used a method created by Colaizzi (Morrow, Rodriguez, & King, 2015). The Colaizzi's method has seven stages in analyzing data: (1) familiarization, (2) identifying significant statements, (3) formulating meanings, (4) clustering themes, (5) developing an exhaustive description, (6) producing the fundamental structure, and (7) seeking verification of the fundamental structure. Many factors were considered to ensure the validity of this research. This research ensured dependability, credibility, confirmability, and transferability through some measures. First, a good relationship with the patients and their families was established. Second, member checking was done to clarify the transcripts, keywords, themes, and subthemes.

Ethical consideration

This research had obtained ethical approval from dr. Kariadi Hospital Health Research Ethics Committee with the ethical number of 198/EC/KEPK-RSDK/2019. The ethical considerations of this study were carried out based on the principle of the five rights of human subjects in research. These five rights include the right to self-determination, privacy, dignity, anonymity, and confidentiality.

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RESULTS

Participant characteristics

As seen in Table 1, the result showed that the majority of the participants were female (60%), aged less than 40 years old (60%), had primary school as an educational background (40%), and was the children of the patients (40%).

Table 1. Characteristics of participants (n=10)

Characteristics	*f*	%
Age		
< 40 years old	6	60
≥ 40 years old	4	40
Gender		
Male	4	40
Female	6	60
Education		
Primary school	4	40
Junior high school	1	10
Senior high school	2	20
Diploma	1	10
Bachelor	2	20
Relationship		
Children	4	40
Parent	2	20
Spouse	3	30
Brother	1	10

The study resulted in three themes related to the family's experience: (1) positive and negative behavior in nursing care, (2) living with colostomy, (3) expectations for nursing care.

Positive and negative behaviour in nursing care

The participant expressed positive and negative behavior in ostomy nursing care, especially nurses. However, the positive impression outweighed the negatives. The participants stated that the nurses were friendly and had good communication.

> "…The attitude of nurses in the hospital is all good. They already know my child. If we met somewhere else, they recognized my child's face and always greeted first" (P.5).
> "…Nothing is lacking in their attitude. The nurses here are subtle and polite. They are also good and likes to joke" (P.6).
> "…Nurses in the hospital are polite and respect the patient. The way they speak is also nice and polite. There is nothing to say loudly like yelling or getting angry" (P.10).

They also said that the ostomy nurses not only paid attention and supports to the patients but also helped and taught the patients and families.

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> "...I am grateful for my father being treated in this hospital; nurses always pay attention to the condition of my father, such as asking how my father is doing and ensuring that he feels comfortable" (P.4).
> "…nurses give encouragement to patients. When the patient does not want to eat hospital food, nurses encourage patients to be eager to eat a lot to recover quickly ... nurses give encouragement to patients. When the patient does not want to eat hospital food, nurses encourage patients to be eager to eat a lot to recover quickly." (P.8).
> "…when using a colostomy for the first time, the nurse teaches the family and caregiver. They teach how to replace a colostomy" (P.1).
> "…The nurse here is aware, every time there is a problem or when we ask for help, they respond quickly" (P.7).

On the other hand, negative impressions were also expressed by the family, such as long waits of nursing care, unresponsiveness, lack of skills, and being unreliable.

> "…here to wait for a new colostomy bag can be one, three, even up to four days. When moving to another room, the nurse also said that the bag had run out, so we had to wait all the time ... there is good work and bad work. There are nurses who put up a colostomy bag, but only a few hours apart, the colostomy is already worn off." (P.8).
> "…When my brother came for a biopsy, he felt in pain. Maybe the nurse thought that it didn't hurt so that it didn't really matter even if the patient looked very weak" (P.1).
> "…I want the nurse to treat the patient well and clean. So far, it hasn't been like that. The nurse just told us to clean it up" (P.9).

Living with colostomy

The participants mentioned that colorectal cancer patients faced some challenges living with a colostomy. The patients experienced some difficulties in living with colostomy though many of them were able to cope with it. Some difficulties reported were feeling of shame and dirty, physical complaints, activity disruption, and altered sleep.

> "…only families know that the mother uses colostomy. If other people know and see the poop suddenly out of the bag, maybe people can feel strange with it and judge that it is dirty." (P.10).
> "…what he (patient) complained about his stomach, which was always tense. Just eat a little bit, he had already felt full. Now he is also rather weak, maybe because he can't eat because when he eats even just a little, he feels like vomiting right away. Now, his body also feels more pain." (P.1).
> "…according to him (patient), his waist is still in pain. Before there was a colostomy, all activities could be carried out, since there is a colostomy the activities have been limited, the activities cannot be done like before ... it's different now because he can't enjoy sleep anymore. Usually, he could sleep freely when there was no colostomy. Now he is more careful when sleeping because there are wounds (ostomy)." (P.5).
> "…now, he is not fit anymore, so he cannot work and support the family." (P.6).

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Although the patients experienced some problems, some participants also stated that the patients had been able to adjust to the colostomy. As a result, the patients could return to their jobs, enjoy their life, and improve their health.

> "…for him, there are no problems when using a colostomy (to work)" (P.1)
> "…Alhamdulillah no interference, he can still work as a driver smoothly. During driving a bus back and forth to Jakarta, there is no big deal … he never told me about complaints and problems. During this time, what I saw he seemed to enjoy and relax with his current situation." (P.7).
> "…previously (the patient) is often nausea when eating, and no appetite, now (the patient) can eat." (P.8).
> "…now since using colostomy, she looks healthy, she's not like she used to be. Mother said that she was healthier." (P.10)

Expectations for nursing care

The family expected better nursing service, especially by the ostomy nurses. They demanded the nurses to motivate and prioritize the patients.

> "…our hope is that patient services can be prioritized because this hospital is a central hospital, so the service must be better than the regional hospitals … patients with colostomy have a lot of thoughts, so maybe nurses can encourage and motivate patients to pass their life-changing experience." (P.2).
> "…I want my husband to be treated well and clean (by the nurses), not only told us to do so (colostomy procedures)." (P.9).

DISCUSSION

Positive and negative behaviour in nursing care

The participant expressed positive and negative behavior in ostomy nursing care, especially the nurses, though their positive impressions were more dominant. In addition, to be attentive and supportive to the patients, the nurses helped and taught the patients and families. These caring behaviors seem important to patients and families. This is supported by Blacius and Setyowati (2016), who point out that caring has implications for nursing practice, so that nurses who have caring behavior will show kindness and politeness. Swanson (2007) also suggests that professional health workers have an important role in nursing services in hospitals. Providing caring can improve and influence the quality of service and improve the well-being of everyone.

Health professionals play an important role in meeting individual information needs regarding colostomy care. Because of the trust in healthcare professionals, the informants in this study had learned about the colostomy and its treatment largely from their surgeons and nurses. Two systematic reviews by Danielsen, Burcharth and Rosenberg (2013), and Phatak, Karanjawala, Chang and Kao (2014) identified that the impact of patient education for patients with a stoma has potential benefits. The results of a systematic review by Faury, Koleck, Foucaud, Bailare and Quintard (2017) also show that educational interventions for patients with a colostomy can have a contrasting impact on the quality of life and a positive impact on patients' psychosocial as well as self-management.

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The participants also stated that the nurses were friendly and had good communication. Nurses, in this case, provide enthusiasm to the patients during their treatment in the hospital. They give a good explanation to the patient, are easy to question, and to be asked for consideration. Macdonald (2016) found that nurses are skilled in obtaining clinical information to empower patients and establish therapeutic relationships. Taylor and Morgan (2011) identified that providing quality support before, during, and after colostomy care is needed to improve the quality of life of patients. Nurses in interacting with patients and their families need communication skills. Another study by Chan, Wong, Cheung and Lam (2018) revealed that good physical management and involving effective nurse-patient communication in care add psychosocial comfort to patients.

However, the family identified that long waits of nursing care, as well as nurses being unresponsive, lacking skills, and unreliable as the negative aspects. In this case, the participants said that they were waiting too long for the new colostomy bag and the intravenous fluid that was not immediately replaced. This is in accordance with the results of Adriana's (2010) study, which states that almost half of nurses have not provided caring, especially in communicating with patients. Ostomy nurses need to improve their nursing care, especially in terms of skills, responsiveness, and awareness.

Living with colostomy

The participants mentioned that colorectal cancer patients faced some challenges living with a colostomy, such as activity disruption, and altered sleep. Changes in daily life become the main thing in patients with a colostomy. Some participants said that their families had limited activities such as housework; some even stopped working. The findings of this problem are similar to those found by Dabirian et al. (2011), where most patients revealed that they had to change or leave work after the onset of their disease and ostomy, and that colostomy also affected their income. However, Dabirian's finding was quite different from the other results of this study, which found that some patients could finally return to their jobs. Liao and Qin (2014) also found that patients with colostomy experienced disturbances and difficulties at work and also in social situations, body image, and stoma functions. These difficulties were similar to other categories of this study, that feeling shame and dirty was reported by the participants. It included feelings of discomfort or fear of others, and knowing the circumstances experienced by patients. This was because the stool was clearly visible in the patient's stomach so that patients were afraid of people seeing them dirty. This finding is also consistent with the results of research by Jansen, Koch, Brenner, and Arndt (2010), where they found that the discharge from the colostomy bag that came out was considered dirty for others. This makes a negative self-image for users of the colostomy so that embarrassment arises.

The existence of new devices in the body certainly has an impact on the daily use of colostomies. Some participants said that the patients experienced difficulties when they wanted to pray and sleep. Some had to use a chair during prayer because of difficulties with a colostomy. This finding is in accordance with research conducted by Cengiz and Bahar (2017) in their phenomenological study on 12 participants who were all Muslim. They obtained a theme in the form of "limits on activities in daily life." From this theme, seven sub-themes were found, such as dressing, bathing, sleeping, sex, physical activity, prayer, and social life. This finding is further strengthened by Akgül and Karadag's

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(2016) research, where they found that the procedure for making colostomy gives challenges for various religious practices in Islam, including those related to ablution, prayer, fasting, and pilgrimage.

Although the use of colostomy is a therapeutic treatment for digestive problems, patients still feel physical complaints, as for example, feeling sick, nausea, vomiting, weakness, and having difficulty defecating. This is similar to research by Jansen et al. (2010), where they explain that people with colostomies have many problems in physical function and roles. Fatigue, dyspnea, and loss of appetite are some of the worst categories. This is also significant with the findings of Zhang, Hu, Xu, Zheng and Liang (2013), where they found significant values for physical disorders such as fatigue, pain, constipation, and diarrhea.

Even though patients experienced some difficulties in living with a colostomy, many of them were able to cope with it. As a result, the patients could enjoy their life and improve their health after using colostomy. Some participants said that patients did not encounter serious problems when using colostomy. They even felt physical comfort, including being painless, gaining weight, being able to eat normally. This is similar to the research of Szpilewska Juzwiszyn, Bolanowska, Milan and Chabowski (2018), in which a total of 43% of respondents stated that their health has no bad changes and some have even improved since using a colostomy.

In addition to physical improvement, some participants said that patients did not mind the situation they were experiencing. Despite physical impairments, these patients did not think too much about the situation they were experiencing. This is in line with research by Tao, Songwanthana and Isaramalai (2016) that informants' perceptions of colostomy are often associated with abnormalities, discomfort, difficulty in care, social isolation, and limited job choices. Survival is the most important thing, allowing these informants to accept the possibility of colostomy formation by following the surgeon's advice and embracing their destiny. A positive mood is also useful for individuals to deal with the negative effects associated with a colostomy. Popek and Grant (2010) found that patients who were optimistic and positive to receive their colostomy had a high quality of life. An optimistic attitude can help people to successfully adapt to the disease.

Changes in the quality of life of patients with colostomy varied from negative and positive responses. In this theme, negative sub-themes were more dominant than positive. This finding is similar to the research of Kimura, Kamada, Guilhem, Modesto and de Abreu (2016), which revealed that the obstacles faced by patients with colostomy significantly affect their physical, psychological, social and spiritual well-being. From the analysis of Kimura et al. (2016), it was found that there were more negative subcategories than positive ones. This is also supported by Von Klaassen et al. (2016), who reported that living with colostomy causes negative impacts on the overall quality of life of the patients

Expectations for nursing care

The family expected better nursing service, especially by the ostomy nurses. They demanded the nurses to motivate and prioritize the patients. Some participants hoped that

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nurses could improve nursing services for patients and also support patients morally. The role of nurses as health care providers in patients with colostomy needs to be improved due to the low quality of life of colostomy patients (Liao & Qin, 2014). Other studies have found that the expectations for nursing services were focused on the desire to be treated humanely, assisting in the adaptation as a member of the household, restoring and increasing patient strength, and help overcome the patient's weakness (Ferreira-umpiérrez & Fort-fort, 2014). The expectation is an important factor in the bio-psycho-social-spiritual aspect. Expectations relate to how people's beliefs affect their behavior. Improved self-concept can be done by nurses by helping patients to shape their thinking to be more positive, realistic, such as encouraging patients to do something for themselves. Increasing the caring behavior of nurses is an ability to be dedicated to others, showing concern, watching with caution, feeling empathy for others, and feelings of love or love.

CONCLUSION

The findings showed that positive behaviors in nursing care outweighed the negative things. The family was pleased with the ostomy nursing care though some aspects need to be improved. Moreover, colorectal cancer patients experienced some difficulties in living with colostomy, resulting in negative impacts on their quality of life. Therefore, this study concluded that colostomy nursing care still needs to be improved. As a result, it is recommended for ostomy nurses to improve their nursing care, especially in terms of skills, responsiveness, and awareness, and for further research to get a deeper perspective of colostomy patients with a diverse age group and gender.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest in this work.

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The Experiences of Mothers with Intrauterine Fetal Death/Demise (IUFD) in Indonesia

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ABSTRACT

Background: Intrauterine Fetal Death/Demise (IUFD) is a traumatic event for mothers. Mothers with IUFD have the risk of experiencing depression, anxiety, sadness, and sorrow in their lives. Research focusing on how mothers deal with such a traumatic experience is therefore necessary.
Purpose: This study aimed to explore the experiences of mothers with Intrauterine Fetal Death/Demise (IUFD) in Indonesia.
Methods: A descriptive qualitative study with a phenomenological approach was carried out to seven informants who were recruited using a purposive sampling technique. Data were collected through in-depth interviews and analyzed using the Colaizzi's method.
Result: The results showed four major themes, including the mothers' response to a loss such as painful and traumatic experience; moral support received by mother; negative behavior from others such as stigma and lack of support; and physical and psychological changes that interfere with the role as wife and mother.
Conclusion: The history of IUFD was a very traumatic experience and had quite a high emotional burden for mothers. Hence, it is necessary to integrate support and therapeutic communication into practice.

Keywords: Intrauterine fetal death; mothers' experiences; social support

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BACKGROUND

One of the high risks of the pregnancy is mothers with intrauterine fetal death/demise (IUFD). According to the American College of Physicians and Gynecologists (2002), IUFD is a dead fetus in the uterus with a fetus weighing 500 grams that often occurs in the twentieth week or more of the pregnancy. Furthermore, Cunningham et al. (2014) stated that perinatal outcome statistics cover fetuses who die and neonates born weighing 500 grams or more.

Data from the World Health Organization (2015) shows that the infant mortality rate (IMR) in ASEAN (Association of South East Asia Nations) countries such as in Indonesia

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is 27/1000 live births. Furthermore, the results of the 2015 Interdental Population Survey (SUPAS) in Indonesia also showed that the total IMR was 22.23/1000 live births, and this statistic had reached the 2015 MDGs (Millennium Development Goals) target of 23/1000 live births (Depkes, 2015). This statistic should be a concern for not only the government and health care facilities but also the community to take necessary actions for preventions.

A stillbirth – death or loss of a baby before or during delivery, is a grief event for parents. Even with a high increase in quality of care in the health sector, there are still significant cases of IUFD caused by several factors, including mother, fetus and placenta (Kary & Oraif, 2017). Fetal death is shown by the fact that after separation, the fetus does not indicate life such as heart rate, umbilical cord pulses, muscle movements, and attempts to breathe (Patel, Thaker, Shah, & Majumder, 2014). IUFD often causes trauma to the mother and family. A mother who experiences IUFD is at risk of experiencing depression and feeling anxiety and sadness or grieving for more than six months. A study of 769 women who experienced IUFD reported that the women received support from families (91.7%), nurses (90%), and doctors (53.4%). Such support can reduce the level of depression and anxiety in mothers, while single women, divorced, and widows have a higher level of depression after experiencing IUFD (Temple & Smith, 2014). Furthermore, Brierley-Jones, Crawley, Lomax and Ayers (2015) reported that mothers who experienced IUFD felt that they were still stigmatized and ignored by people around them. Such condition becomes an emotional burden for the mothers which causes them to feel depressed and traumatized by the event and result in the disruption of their roles as mothers. Social stigma and loss of identity are commonly experienced by mothers with IUFD (Cacciatore, Froen & Killian, 2013; Hill, Cacciatore, Shreffer & Pritchard, 2017; Murphy, 2012;).

The phenomenon of stillbirth has been widely studied. Fewer studies, however, have been undertaken on the sociocultural aspects of stillbirth (Cheer, 2016). The struggle of whether to disclose the stillbirth or not is echoed in the literature by mothers who have experienced guilt, shame, social isolation, and exclusion from family, friends, colleagues, and strangers (Brierley-Jones et al., 2015; Cacciatore, 2010; Thompson, 2013). If the opportunities to share memories of their stillborn babies increases maternal wellbeing, if there was a social or perceived stigma surrounding stillbirth, and if there was a possibility of an expected finite grieving period, and overcoming those barriers are necessary to facilitate sharing opportunities (Keeble & Thorsteinsson, 2018). The mother and their families perceived stillbirth to be a very sudden, unexpected, confusing, and frustrating experience, as the exact cause was not explained to them clearly. They attributed various explanations, including superstitions, biomedical explanations, and blamed various persons in their lives for the occurrence (Gopichandran, Subramaniam & Kalsingh, 2018). Additionally, parents report adverse long-term effects on their ability to manage their jobs and their family life (Ryninks, Roberts-Collins, McKenzie-McHarg & Horsch, 2014). There is necessity to do research that examines the psychological response of mothers who experience IUFD, especially the cultures that greatly influences the lifestyle of pregnant women in Indonesia. Therefore, it is important to conduct such a study and understand this experience from all sides, including the changes that occur in mothers with IUFD.

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PURPOSE

This study aimed to describe the experiences of mothers with Intrauterine Fetal Death/ Demise (IUFD) in Indonesia.

METHODS

A qualitative phenomenological research design was used in this study. The target population was mothers who had experienced intrauterine fetal death (IUFD) in South Lampung District, Indonesia. The participants were recruited using a purposed sampling method with the most variant samples (Polit & Beck, 2012). They were screened for eligibility to participate in this study based on the criteria of mothers who had experienced IUFD for more than six months according to the time in the loss process stage (Videbeck, 2011). The method was suitable because it can see the perspective of the informants to be interviewed, and through in-depth interviews, researchers can analyze the results of the meaning developed by mothers who experience IUFD. From the interview results, several similarities and differences in meaning were identified from some informants. The interview guidelines to be asked to the mothers were also formulated. The interview guide is generally more structured than informal conversation interviews, and there is still little discussion in its composition (Turner, 2010). The questions used in the interview examine more deeply the informants' responses to retell what they felt from their experiences of experiencing IUFD.

The interview was conducted in two cycles. The first cycle was carried out to find data in full for approximately 45 minutes using the Indonesian language and recorded using a tape recorder. In the second cycle, the participants were asked to validate the findings of the interviews. During the interview process, everything encountered by the researchers was noted. The informants' expressions, attitudes, and facial expressions when responding to the questions were included in the interview transcript. The Colaizzi's method was used to process and analyze the data assisted by software to obtain themes and descriptions of the experiences of mother participants.

Prior to the study, the researchers explained the purpose of the study as well as the rights and obligations as the participants. If they agreed, they signed informed consent. Their identities were also kept confidential. A code name of I1to I7 was given to the participants according to the time of participation. The ethical approval of this study was received from the Ethical Committee of the Sint Carolus School of Health Sciences.

RESULTS

This study involved seven participants who had more than six months of IUFD experience according to the time in the loss process stage. Most of them were primipara (57.2%) and aged 26-40 (57.2%). Also, most of them lose their fetus at 8 – 9 months of pregnancy. Table 1 shows the participant demographic profile of the study.

Table 1. Demographic profile of participants

Demographic profile	*n*	%
Age		
18 – 25	3	42.8%

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Demographic profile	*n*	%
26 – 40	4	57.2%
Parity		
Primipara	4	57.2%
Multipara	3	42.8%
Age of the fetus at death		
6 – 7 months	3	42.8%
8 – 9 months	4	57.2%

From this study, four themes were found which presented various experiences of mothers who experienced IUFD. These themes are discussed separately and interrelated with each other to reveal the experiences of mothers who experience IUFD and have been identified based on the research objectives.

Mothers' response to loss

The first theme developed in this study was the mothers' response to loss. In this theme, the informants stated that they had a painful experience when they had an IUFD. They stated that they felt a very deep sorrow and traumatic about the incident. The forms of grief experienced by informants included sadness, crying, anger, disappointment, and in time, the informants could accept the event. Some of the participants' expressions are quoted below:

> "My reaction is immediately crying while looking at my baby, who had no hope. I was sad and did not believe that my child had died. I was disappointed as well. I wish someone had taken care of me at that time, but how else would it all be God's will." (I_1).
> "I was shocked, and I immediately cried, I couldn't take it anymore. I was very sad, angry, and disappointed with myself and blamed myself (laughing in tears). I wish I did not hear my mother's words, but I also could not blame my mother. If I said I was whole-hearted, what I would do, I was not whole-hearted. And I have to be whole-hearted. Everything has happened, and indeed it is not my child's fortune." (I_6).

Furthermore, the informants also revealed a deep trauma to the event. Some of them even refused and postponed their next pregnancy. Some participants expressed the following:

> "When it happened, I was traumatized, Ma'am, I didn't want to get pregnant again because it had happened for the third time." (I_5).
> "At that time, I was traumatized, whenever I heard baby's voice, I could not be happy, I immediately cried, especially when I was in the hospital when someone next to me had a baby." (I_6).

Moral support received by mothers

The second theme raised the moral support received by the mothers. In this theme, it was revealed that some informants received support from people closest to them, such as from the family, medical teams, and community that could help informants' health recovery. Assistance received by the mothers can help them passed through the normal grieving

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process. Besides, the assistance provided by the medical team, especially nurses, could help mothers find the meaning of the loss, and the family could understand the conditions that occurred in mothers with IUFD so that mothers could undergo normal activities.

> "The response of the nurses was concerned about my condition; they gave spirit and hope." (I_1)
> "The doctors and nurses are good, always give support to stay strong and not stressed, and give hope and advice that I take part in the pregnancy program ..." (I_5)

A family is a group of person who is close to an informant who is always there at all times in providing support. Support provided by the family was expressed by the informants, as well as the support they received from the community:

> "Husbands and parents are good with me; they are very patient in taking care of me." (I_4)
> "The great strength that I received was from my family ..." (I_5)
> "For families, they are very attentive, especially my husband and child ..." (I_6)
> "People like my neighbors and community are good, they visit me and give encouragement, support, and prayer ..." (I_1)
> "For good neighbors, I came home from the hospital, and they immediately visited me to give me support ..." (I_4)

Negative behaviors from people around the mothers
This theme raised the negative behavior from people around the mothers. In this study, the mothers perceived that the treatment they received was not good, including from the family, medical team, and the community, such as getting a negative stigma, rejection, and even a lack of communication delivered by the nurse.

> "The response of the midwife/nurse is normal after the action is done; there is nothing to say." (I_2, I_3)
> "The family of my husband (brothers) gave no care about me; instead, they are becoming suspicious and stay away from me." (I_1)
> "…there are people who talk about me, slamming compared to their experiences…." (I_5)

Physical and psychological changes that interfere with the role of wife and mother
This theme raises physical and psychological changes that interfere with the role of wife and mother, which reveals the changes experienced by mothers after experiencing IUFD. The informants revealed that many physical and psychological problems occurred so that they experienced obstacles in carrying out daily activities that interfered with their role as wife or mother.

> "After the incident of fetal death that I experienced, I said I'm unconscious, dizzy, and tense. I often get sick because I always think of my fetus." (I_1)
> "All my needs were met by my husband; my job was replaced by him because I must not have too much strength and a lot of thoughts because I was often dizzy and tense." (I_4)

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> "I often cry, daydream like crazy. I like being sensitive to people and not responding to them. I often get angry with my husband." (I_1)
> "I was traumatized until I didn't want to see the baby's clothes and hear the baby's voice. I cried myself, often had trouble sleeping, was nervous. I am not excited to do activities and chat with neighbors ..." (I_6)

DISCUSSION

This study aimed to investigate the experiences of mothers with IUFD. Seven mothers having the experience of IUFD for more than six months were interviewed in this study. Four major themes were developed, including mothers' response to a loss, moral support received by mothers, negative behavior from others, and physical and psychological changes that interfere with the role as wife and mother.

The first theme in this study was the mothers' response to loss. This incident made some participants experience a deep trauma so that they cried and felt sad when they recalled the incident. The informant stated that the incident was so traumatizing that they were afraid to get pregnant again, even though it had been more than two years. The trauma response expressed by the informants included feeling guilty for all the actions they had taken before IUFD, feeling that God had left them, and regretted the pregnancy. A previous study reported that after one year of infant death, a woman will postpone her pregnancy and have an excessive awareness of the next pregnancy (Daurgirdaite, Akker, & Purewal, 2015). Another study found a difference in the loss response experienced by mothers, from the age of mothers who are 18 years old with mothers over 30 years of age. Informants aged 30 years and over have a deeper loss response, and expectations for subsequent pregnancies are smaller than informants aged 18 or 20 years. At this age difference, seen from maternal factors, mothers over 35 years old have a high risk of developing IUFD (Cunningham et al., 2014).

The second theme described the support received by the mothers. This was expressed by the participants that the support they received from those around them, such as family, medical team, and community, could help their mental health recovery. Health professionals face difficult choices about what issues should be raised with parents at this sensitive time and the optimal timing to inform them of the decisions they will face (Sun, Rei & Sheu, 2014). The support of the medical team, especially nurses, is highly needed by mothers who experience IUFD. In this study, the mothers revealed the support provided by nurses included enthusiasm, attention, and hope. According to Crawley, Lomax, and Ayers (2013), the support received by mothers from a professional medical team about mental health outcomes after the mother experiences fetal death while the mother was at the hospital or after going home, it was something meaningful to motivate mothers. Previous research conducted by Temple and Smith (2014) stated that support from families, nurses, and doctors received by women with IUFD is very helpful in reducing depression and anxiety in women with IUFD, compared to single, divorced, and widowed women who have depression rates higher after experiencing IUFD. In this research, there is also a form of social support provided by people around the mother. Participants revealed that in addition to support from the medical team and their families, they also received support from the community such as prayer and encouragement. Allahdadian, Irajpour, Kazemi and Kheirabadi (2016) stated that the women expressed

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their need for family support during these hard times and mourn stages. Furthermore, Mills, Ricklesford, Cooke, Heazell, Whitworth and Lavender (2014) also reported that participation in tailored support programs was considered to have significant benefits, the importance of emphasizing high-quality psychosocial support to parents who are saddened in labor.

This study shows two forms of support received by participants, namely emotional support and information support. Emotional and information support were shown in the form of family assistance at the hospital or home, how long, and how easy it was for them to talk or obtain information from health workers around them. The information given to mother and family members was examined by asking whether their opinions were appreciated if the information was adequate, and who had provided the information (Kirk, Fallon, Fraser, Robinson, & Vassallo, 2015; Majasaari, Sarajarvi, Koskien, Autere & Paavilainen, 2005). When care was not delivered well, mothers were further distressed, on top of their grief for their baby, with unpredictable long-term consequences. However, when this one chance was seized and used to its full capacity, the benefits appeared to be significant and long term. Parents were particularly negative about perceived emotional distance on the part of health professionals (Downe, Schmidt, Kingdon & Heazell, 2013). The communication and openness look very important; the family and the closest person become the biggest support system for the mother is facing uncomfortable conditions. Thus, any support given by the health professional, family, and community to mothers who experience IUFD can help mothers pass through the grieving process that is experienced and can take mean from loss so that mothers can continue their normal activities.

The third theme describes the negative behavior of people around the mother. This was revealed by informants that they get negative behavior from people around like, negative stigma even to accept rejection. In the study of Brierley-Jones et al. (2015), the mothers who experience the stigma of infant mortality and stigma come from families, professional medical personnel, friends, coworkers, and strangers, even from the mothers themselves. They assume the mother deliberately did not maintain her pregnancy so that IUFD occurred. Blame the mother for not doing regular pregnancy checks and maintaining inadequate food. They recounted experiences that suggested that relationships with others had been changed irrevocably and that other peoples' attitudes towards them had altered too (Murphy, 2012). Mother has an increasingly greater sense of guilt because of that. Lack of knowledge and understanding of family or community about IUFD causes negative stigma so that the behavior can slow down the recovery process and worsen the mental condition of the mother.

The last theme reveals the physical and psychological changes that disrupted the role of wife and mother. This can disturb the relationship between mother and family and the surrounding community, both in terms of communication and socialization. Also, the activities and role of informants as wives and mothers were disrupted due to delays in the process of receiving IUFD incidents experienced by the informants. The previous study by Huberty, Coleman, Rolfsmeyer, and Wu (2014) mentioned that women who had after infant death have barriers to physical activity such as emotional symptoms, lack of motivation, feeling tired, and feeling guilty. Psychological changes often occur in mothers

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who experience fetal death. This period occurs to the mother after experiencing the death of the baby, and the mother has major consequences in showing the results of psychological symptoms such as sadness, anxiety, fear, and suffering. According to Heazell et al. (2016), mothers who experience IUFD often reported experiences of negative psychological symptoms, including depression, anxiety, posttraumatic stress, panic, phobia, and even with the idea of suicide. Because there were physical and psychological changes, the mother cannot fulfill her normal role as a wife or mother. The grief literature indicates that people expect there to be an endpoint to the period of grief, and that grief symptoms should decrease over time (Penman, Breen, Hewitt & Prigerson, 2014). Some couples reported experiencing conflicting emotional reactions to sexual relationships. Women, more frequently than men, reported guilt and disturbing images, thoughts, and feelings that interfered with sex (Burden et al., 2016). Thus, the role of health care providers in physical activity is needed by women who experience infant mortality for the importance of physical activities such as working, exercising, and maintaining a healthy body and their weight, and can help improve emotional and mental health in mothers.

CONCLUSION

This study revealed four themes that described the experiences of mothers with IUFD, including the mothers' response to loss, moral support received by mothers, negative behavior from people around the mothers, and physical and psychological changes that affected mothers' roles. The findings in this study are expected to increase the knowledge of health/community cadres about mothers' experiences of IUFD. It is hoped that the community will not have a negative stigma and judge women with IUFD experiences, and be more sensitive in providing support for maternal psychological conditions. It is also expected that to improve healthcare services, nurses should increase their knowledge and understanding of nursing in medical and psychological care with therapeutic communication for mothers with IUFD, as well as increase their certifications to enhance their competences.

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CONFLICT OF INTEREST

None

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Casey-Fink Graduate Experience Survey for Nurses and Preceptors in the Kingdom of Saudi Arabia

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ABSTRACT

Background: Preceptors play an essential role in supporting new nurses during the transitional period in professional roles. Moreover, graduated nurses experience several challenges during their transitional role from students to professional nurses, despite of the considerable relationship between nurses and preceptors.
Purpose: The study aims to evaluate the relationship between the experiences of nurses using Casey-Fink Graduate Nurse Experience Survey and the number of preceptors in Saudi hospitals.
Methods: A cross-sectional study design was adopted, and Casey-Fink Graduate Nurse Experience Survey was used to collect data from 84 newly graduated nurses. Descriptive and regression analysis was used for data analysis.
Results: Results showed that there was no statistically significant relationship between the responses of 5 factors of Casey-Fink Graduate experience survey and the number of preceptors. Based on the survey, (33.8%) had stress whereas significant causes of stress were student loan (41.9%), personal relationships (13.5%), living situation (27%), and finances (10.8%).
Conclusion: No statistically significant relationship was found between variables including; support, patient safety, communication/leadership, professional satisfaction and job satisfaction. The significance of preceptorship programs should be considered by the primary health care corporation to support and prepare preceptors of newly graduated and recruited nurses.

Keywords: Communication; learning; nurses; preceptors; Kingdom of Saudi Arabia

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BACKGROUND

Health and education programs rely on preceptors to facilitate preceptees' transition from students to professional nurses. The preceptorship relationship has a significant caring component, even though proficiency and experience are essential. The

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relationship between nurses and preceptors reflects caring expressed through kind words and actions. Supportive and caring preceptor workforce can help in the transition of student nurses into experts by improving their sense of belonging in the nursing profession (Omer & Moola, 2019). The transition of graduated nurses is importantly handled in preceptorship programs that are able to provide safe and competent patient care, leading towards the increase in retention of newly graduated nurses, and improve the quality of care (Arbabi, Johnson, & Forgrave, 2018). Kim and Kim (2019) outlined that the preceptor's personality attributes such as self-efficacy, and leadership qualities as significant characteristics that help in the successful transition of new nurses into professional nurses.

The health sectors around the world are experiencing a shortage of healthcare workforce (Haddad & Toney-Butler, 2019). This is evident from the report of the World Health Organization (WHO) which estimated a shortage of 12.9 million by 2035 (World Health Organization, 2013). Despite of significant relationship between nurses and preceptors, graduated nurses experience several challenges during their transitional role from a student to a professional nurse. Similar issues are encountered by experienced nurses when entering to new workplace to be oriented to an unrecognized work environment. It is assumed that the role of preceptors is vital to support new nurses during the transitional period in professional roles (Borimnejad, Valizadeh, Rahmani, Shahbazi, & Mazaheri, 2016).

Wong et al. (2018) conducted a study to identify the challenges encountered by the nursing graduates during their transition period. Rush, Adamack, Gordon, Lilly, and Janke (2013), on the other hand, highlighted that increased support from peers, mentors and preceptors are significant in positively influencing the transition period of nurses. Trained preceptors were also identified in creating a positive influence on the newly graduated preceptor relationship. The role of the preceptor is expanding from facilitation to support, coaching as well as positive role modeling for the formation of a constructive environment. The corresponding relationship between nurses and their preceptors provide them the opportunity to guide and encourage fresh nurses to efficiently perform their respective roles and responsibilities, leading towards improvement in skills and ultimate satisfaction in their jobs. Kamolo, Vernon, and Toffoli (2017) outlined that team collaboration, communication, and an increase in individual confidence are the ultimate benefits of preceptorship. The implementation of the nursing preceptor has proved to be beneficial for the nurses' retention, contributing to the increased rate of 90% (Rush et al., 2013).

Certain factors such as the difference in focus, level of independence in practice, and structure, and the experiences of the graduated nurses' preceptors can be different from those of experienced nurses, since most of the fresh nurses experience professional isolation, lack of support from experienced staff and professional discrimination (Alboliteeh, Magarey, & Wiechula, 2018). It has been suggested to assist students with increased preceptorship and professional support, to make them confident enough for their acquired knowledge along with decision-making skills.

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Recently, changes in the healthcare system are increasingly made, as new methods and technology of care delivery are continuously developed. The burden of these changes on staff, especially on nurses is observed by healthcare managers, along with the increased safety risks to introduce new graduates (Schultze, 2017). Nursing schools fall upon healthcare institutions for providing continuing education according to the need of new graduates and fundamental skills of nursing care. They also provide a nurturing and supportive environment to assure those newly graduated nurses become safe and competent members of the healthcare team. This gives rise to the researchers' interest in investigating the topic concerning different domains.

Preceptorship needs to be explored as an essential phenomenon in the nursing profession to improve their knowledge and perceptions regarding the preceptor's roles. According to Casey, Fink, Krugman, and Propst (2004), mostly graduated nurses do not have the appropriate skills and competence which makes them incompetent in fulfilling their responsibility to provide safe patient care based on several factors. These factors include increasing turnover of the experienced graduated nurses, burnout, high-acuity level, increasing workload demands, excessive use of contract labour, and decreasing graduated nurses' orientation. The overall discussion indicates that the problem is highly critical and is associated with multiple factors. Therefore, investigation of the topic concerning certain regions is crucial to improve healthcare quality.

Therefore, the study intends to evaluate the relationship between experiences of nurses and preceptors using Casey-Fink Graduate Nurse Experience Survey in Saudi Arabian hospitals. Rationale behind the selection of the region is based on its reported high turnover rates. The study results are assumed to be helpful for nursing leaders in the development of an effective transitional program, improving newly graduated nurse's satisfaction as well as providing a meaningful experience. One of the main contributions of this study is the use of the Casey-Fink graduate experience questionnaire to determine the relationship between nurses' experience and preceptors in Saudi Arabian hospitals. To the best of the author's knowledge, this is the first study to explore this objective using the Casey-Fink Graduate Experience questionnaire.

METHODS

Research design

The cross-sectional study design was employed to determine the relationship between experiences of nurses and preceptors in the hospitals of Saudi Arabia. In this context, a survey approach has been used to collect data prospectively from graduated nurses. The study was conducted in 9 different hospitals of Al-Bahah region, Saudi Arabia.

Samples

The study targeted graduate nurses working with the experience of minimum 6 months and a maximum of 2 years in Saudi Arabian hospitals. Since the researcher is a resident of Al-Bahah region, the study was conducted in 9 general and public hospitals of Al-Bahah region of Saudi Arabia. These hospitals include King Fahad Hospital, Prince Mishari bin Saud Hospital, Almakwah Hospital and Al Mandaq General Hospital, Al Aqiq General Hospital, Buljurshi Psychiatric, Gilwah General Hospital, Naqaha Hospital, and Al Qara General Hospital. Limited nurses were working in these hospitals

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so a sample size of 80 was achieved based on 104 as population, 95% confidence level, and 5% confidence interval. The selection of the graduated nurses was based on their correspondence to the inclusion criteria.

Instrument

A prospective data collection approach was used to collect data from the targeted graduated nurses. Casey-Fink Graduate Nurse Experience Survey was used in the study. The selection of the tool is based on its utilization in previous research (Cline, La Frentz, Fellman, Summers, & Brassil, 2017; Rush et al., 2013). This tool was originally proposed by Kathy Casey and Regina Fink to measure newly licensed registered nurses' comfort with skills over time (Casey et al., 2004). The Cronbach alpha coefficient for the overall questionnaire (24 items) was 0.89. This questionnaire comprises of 5 factors, which include support (α=0.90), communication/leadership (α=0.75), patient safety (α=0.79), stress (α=0.71), and professional satisfaction (α=0.83). A 5-point Likert scale was used to measure the factors from very unlikely to very likely.

Data analysis

Data collected were analyzed using the Statistical Package for Social Sciences (SPSS) IBM version 20.0. Descriptive statistics such as mean, standard deviation, frequencies, and percentages were employed for describing and categorizing the variables. Along with it, regression analysis was applied for quantifying the relationship between Casey-Fink Graduate Nurse experience survey factors and the number of preceptors. The p-value of <0.05 was determined for demonstrating results' significance statistically.

Ethical considerations

The deanship of postgraduate studies at King Saud University approved this study. The Institutional Review Board (IRB) for the College of Medicine at King Saud University granted the approval for conducting this study. Before the performance of the research, a written letter and a copy of the sample were submitted to the clinical administration for providing relevant information about the study. Along with it, study objectives, confidentially and anonymity were also communicated to the participants followed by the gathering of the written consent. One week's time period was provided to the participants for completing and submitting the survey to the nursing directors. The completed surveys were then collected by the researchers.

RESULTS

Results showed that out of 80 participants, 41 were males and 39 were females with a mean age of 26.48. Each nurse has mostly 1-2 preceptors (69%) during their orientation (Table 1).

Table 1. Profile of participants

Characteristics	*f*	%
Age (*M*=26.48; *SD*=3.01)		
Gender		
Male	41	51.25
Female	39	48.75

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Characteristics	*f*	%
Nationality		
Saudi	80	100
Number of preceptors		
0	2	2.5
1-2	55	69
3-5	15	18.5
>5	8	10

The responses of nurses towards the five factors of Casey Fink Graduate Nurse Survey which was measured on 5-point Likert scale response indicating that "1" represents "very unlikely" and "5" is used for "very likely" showed the mean values ranges from 2.53 to the factor of organizing prioritizing patient safety and 3.27 to the factor of professional satisfaction. The average number of preceptors in our study subjects was almost 2 (Table 2).

Table 2. Descriptive statistics of different factors of Casey-Fink Graduate Nurse Experience Survey and number of preceptors

Factors	*M*	*SD*
Support Organizing Prioritizing patient safely	3.43	0.43
Communication/Leadership Professional Satisfaction	2.53	0.41
Job satisfaction	3.06	0.52
Number of preceptors	3.27	0.60

Towards the acceptance of experiencing stress in their life and its cause, 15 (15.8%) agreed, 25 (33.8%) had strongly agreed, whereas, 49 (51.6%) were neutral, and 21 (22.1%) and 10 (10.5%) disagreed and strongly disagreed that they were experiencing stress in their life. The significant causes of stress were student loans (41.9%), finances (10.8%), living situation (27%), personal relationships (13.5%), and job performance (8.1%) (Table 3).

Table 3. Distribution of responses towards level of stress and its causes among nurses

Stress and its causes	*f*	%
I am experiencing stress in my life		
Strongly disagree	10	10.5
Disagree	21	22.1
Neutral	49	51.6
Agree	15	15.8
Strongly agree	25	33.8
Causes of stress		
Finances	8	10.8
Child care	7	9.5
Student loans	31	41.9
Living situation	20	27
Personal relationships	10	13.5

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Stress and its causes	*f*	%
Job performance	6	8.1
Other	0	0

The relationship between the responses of 5 factors of Casey-Fink Graduate experience survey by the nurses and the number of preceptors was assessed by using linear regression analysis. The regression coefficients of each of the five factors (support, patient safety, stress, communication/leadership, and professional satisfaction) indicate no statistically significant linear relationship. The R-square values of these five factors indicate no effect on the dependent variable (number of preceptors) (Table 4).

Table 4. Relationship between different factors of Casey-Fink Graduate Nurse Experience Survey and number of preceptors

Dependent variables	Independent variable	Regression coefficient	*t-value*	*R-square value*	*p-value*
Support	Number of Preceptors	-0.002	-0.079	0.000	0.938
Patient safety	Number of Preceptors	0.013	0.603	0.004	0.548
Stress	Number of Preceptors	-0.002	-0.018	0.000	0.986
Communication/ Leadership	Number of Preceptors	0.044	1.395	0.021	0.166
Professional Satisfaction	Number of Preceptors	-0.023	-0.577	0.004	0.565

DISCUSSION

The present study has depicted the relationship between responses of 5 factors of Casey-Fink Graduate experience survey by the newly graduated nurses and the number of preceptors. Excessive work load, lack of basic as well as advance professional knowledge, communication, individual expectations, change of role, work atmosphere, support from peers and other professional training programs, blame or complaining culture, and personal attitude are some common challenges faced by the nurses during their period of transition.

The results depicted that there was no statistically significant relationship between the responses of 5 factors of Casey-Fink Graduate experience survey by the newly graduated nurses and the number of preceptors. The factors that support the newly graduated nurses during their transition period include improved orientation, increased support, unit socialization and improved work environment. Results also showed that peer support, patient and families, ongoing learning, professional nursing role and positive work environment increased their satisfaction with the work environment. However, factors contributed to the least satisfaction in their working environment include the nursing work environment, working system, interpersonal relationship, and orientation.

More than half of the participants in the present study agreed towards experiencing stress in their life that was caused due to financial issues, living situation, personal relationships, and job performance. However, a previous study conducted by Hayes et

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al. (2006) stated that intention to leave was associated with dissatisfaction with the work environment (including staffing, support, professional development, responsibility, quality of care, and physical environment). These results are also consistent with the study of D'ambra and Andrews (2014) stating that work environment factors play an important role in experiencing stress and dissatisfaction among the newly graduated nurses. Besides, work readiness (organizational acumen dimension) of newly graduated nurses was associated with intention to remain in the current job and this relationship was mediated by job satisfaction; though, the relationship has not been shown quantitatively (Walker, 2013). Moreover, Osmo and Landau (2006) stated that job satisfaction among newly graduated social workers was predicted by the extent to which respondents felt their degree had prepared them for their job (measured after workforce entry).

The relationship between preceptor and graduates is a two-way learning and growth process. Moreover, the newly graduated nurses were expected to take on an active role in their learning. Results depicted that the relationship between responses of the study participants about five factors of Casey-Fink Graduate experience survey and the number of preceptors was not statistically significant. A previous study conducted by Carlson, Pilhammar, and Wann-Hansson (2010) stated that preceptorship is a strategy that help in preparing the newly graduated nurses for the reality of practice, where the integration of theory and practice occur to gain a sense of professional identity in nursing. The role of preceptorship and preceptor is observed as dynamic, complex, rewarding, engaging and consuming strategy. Preceptorship not only depends on preceptors themselves, rather it depends on peers and managers that contribute to the workplace environment.

The clinical learning among newly graduated nurses is likely to be perceived as a process that takes place within the existing practices and social relations. Moreover, the preceptors are responsible for inviting the newly graduated nurses into the community of practice and help them in navigating these relations and practices. A similar study was conducted by Yonge (2012) and stated that nurse preceptors serve as influencers, role models, teachers, friends, assessors, evaluators and supervisors. Therefore, they need to acknowledge the fact that nursing was their primary responsibility, while precepting and patient safety was their foremost priority.

The findings of this study can influence academic and clinical education practice. The level of support, feedback, and encouragement provided by preceptors can enable educators to utilize these methods as a part of their curriculum. Feedback and encouragement can be delivered through a pre-licensure curriculum to nursing students as an approach to instill confidence and validation of practice accuracy. The graduated nurses should be offered a training program to help them understand their important role as an evaluator, educator, and role model. The short-term association established between graduated nurses and preceptors provides attention on learning needs of the graduated nurses and to develop their confidence in performing their expected roles. The quality improvement project should be conducted in Saudi Arabian hospitals and compared to all the graduated nurses' responses for obtaining generalizability. The clinical practice of the graduated nurses should be expanded in other clinical nurses of

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the hospitals such as the recovery room, wound care department, operating room, and intensive care unit.

Findings of the present study can be implied to understand the difficulties of transition for newly graduated nurses to reduce the turnover rate and to support the retention of a qualified workforce to meet future healthcare needs. Moreover, developmental, role transition, relational and organizational strategies are likely to enhance the critical thinking ability, confidence and support of newly graduated nurses. It might also contribute towards transition, relational and organizational components that are critical to the transition. Moreover, newly graduated nurses, with their preceptor, should spend time in the simulation lab putting their hands-on equipment and performing skills.

This study is limited since only certain factors were focused that are associated to the relationship between nurses' experience and preceptors. However, due to the small number of participants, findings of this study cannot be generalized.

CONCLUSION

The results depicted the factors related to the difficulties experienced by the newly graduated nurses, include role expectations, lack of confidence, workload, fear, and orientation issues. In the transition period, these nurses must be prepared for the entry-level practice. The results therefore, concluded that there was no statistically significant relationship between the responses of 5 factors of Casey-Fink Graduate experience survey by the newly graduated nurses and number of preceptors. Around half of the study participants agreed towards experiencing stress in their life. Moreover, the leading cause of stress among nurses was associated with financial issues, living situation, personal relationships, and job performance.

Nurse educators and nurse managers have the opportunity for designing an orientation program that fulfills the needs of the new graduate nurse. It might be essential for considering how preceptors are used in the program as nursing leaders strive to explore the most authentic way. Nursing administration must continue to develop competent nurses as well as retain these nurses for several years of recruitment throughout the organization.

Future studies should consider mixed-method or longitudinal designs for examining this phenomenon further. New insights can be obtained through a discussion group with fresh graduates after the initial interviews related to their experiences, as it may allow them to share their observations and experiences with the preceptors. Future studies should also explore the effectiveness of nursing educators to prepare newly graduated nurses to enter the clinical environment.

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CONFLICT OF INTEREST

None

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A Comparison of Patient Safety Competencies between Clinical and Classroom Settings among Nursing Students

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ABSTRACT

Background: As nurses play an important role in the implementation of patient safety in hospitals, competencies of patient safety should be developed and enhanced among nursing students. Self-assessment is a method that can be used to assess patient safety and its dimensions to help the students prepare themselves before entering the work life.
Purpose: This study aimed to investigate differences in patient safety competencies between the classroom and clinical settings among nursing students using a self-assessment method.
Methods: A descriptive study using the Health Professional Education in Patient Safety Survey (H-PEPSS) questionnaire was conducted among 181 nursing students in a public university in Indonesia. Paired t-test, ANOVA, and independent t-test were performed to determine the comparison in the values of patient safety dimensions across the classroom, clinical learning, and year of nursing course.
Results: Nursing students showed a higher mean value in the classroom setting than in the clinical setting. Out of the seven dimensions of patient safety competencies, "clinical safety" (M=4.36) and "communicate effectively" (M=4.29) obtained the highest score in the classroom setting, while "adverse events" showed the lowest (M=4.03). In the clinical setting, "clinical safety" (M=4.19) and "communicate effectively" (M=4.12) obtained the highest score, while "working in teams" (M=3.82) was the lowest. The third-year students showed a better score than the fourth year in most dimensions.
Conclusion: In this study, the patient safety competencies among nursing students were higher in the classroom setting than in the clinical setting. It is recommended to investigate the factors that can increase the achievement of patient safety competence among nursing students in the clinical setting.

Keywords: Patient safety competences; self-assessment; nursing students

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BACKGROUND

Patient safety is a significant health issue to discuss. It is an essential requirement in the assessment of hospital accreditation nowadays. The Joint Commission International (JCI) employs patient safety as one of the hospital's international standards (The Joint Commission, 2018). In addition to accreditation regulations, increased awareness of patient safety is also applied by the World Health Organization to service providers as well as health professional education institutions with the presence of a Patient Safety Curriculum Guide (Usher et al., 2017; World Health Organization, 2011). The effort is made to provide safe health services for patients.

Nurses, as a part of health workers, have an essential role in the implementation of patient safety. Nurses are the most significant number of health workers so that their roles in identifying, deciding, and correcting medical errors are significant (Attree, Cooke, & Wakefield, 2008; da Costa, Santos, Junior, Vitor, de Oliveira Salvador, & Alves, 2017; Kim, Jeong, & Kwon, 2018; Lukewich et al., 2015). A large number of nurses also has direct implications on patient safety and error prevention strategies (da Costa et al., 2017). Therefore, nurses are required to carry out the care that is safe for patients. Due to the importance of implementing safety measures, patient safety education is required to be organized for all health workers.

Education plays an important role in the efforts made to implement patient safety. As a result, the health departments are triggered to collaborate with educational institutions in the delivery of patient safety education (da Costa et al., 2017; Steven, Magnusson, Smith, & Pearson, 2014). This collaboration is carried out as a preventive effort since students who undertake clinical education will also provide services to patients. One of the ways for educational institutions to improve the quality of the implementation of patient safety is to develop competencies among the students. Competence is important to learn and develop as students have not been fully exposed to patient safety behavior (da Costa et al., 2017; Mansour, 2015; Tella, Liukka, Jamookeeah, Smith, Partanen, & Turunen, 2013).

Delivering patient safety competencies in the classroom is very important for student nurses, especially for the application in the practice area. Education in the classroom will have a significant impact on behavior that will arise in the realm of the clinic (Colet, Cruz, Otaibi, & Qubeilat, 2015; Mansour, 2015; Mansour, Skull, & Parker, 2015; Usher et al., 2017). Education provides not only theoretical knowledge but also awareness related to actual practice areas (Pearson & Steven, 2009). One of the patient safety competencies in health professional education is the Canadian Patient Safety Institute (CPSI) framework (CPSI, 2009). The points in patient safety competencies are taught in health education institutions in Indonesia. Patient safety competencies need to be assessed even though they are not used as a graduation requirement.

One way to assess an individual's competence is by using the self-assessment method. Self-assessment can be useful as a way of identifying strengths and weaknesses to achieve desired goals (Eva & Regehr, 2005; Wolff, Santen, Hopson, Hemphill, & Farrell, 2017). Identification of strengths can lead to a sense of confidence to carry out tasks and plannings without obstacles and doubts. Meanwhile, identification of

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deficiencies can help balance abilities and find ways to overcome deficiencies (Kajander-Unkuri et al., 2014; Stan & Manea, 2015; Usher et al., 2018; Wolff et al., 2017). Self-perception is affected by many things; one of them is a long time studying. Research shows that the period of study in the classroom and clinical settings affect the implementation of patient safety competence. A previous study showed that third-year students have better self-perception of managing safety risks than the second-year ones (Usher et al., 2017). Another study reported a different finding that lower year students have better self-perceptions than higher year students regarding patient safety competence (Lukewich et al., 2015).

Studies related to patient safety competence in Indonesia are rarely found. A few studies investigated patient safety performance in general and not specific in the classroom or clinical settings (Sari, 2015). A study investigating all aspects of patient safety competencies (Julianto, Thiangchanya, & Boonyoung, 2014), as similar to the present study, was conducted among hospital nurses, not students. Therefore, this study is important to provide baseline data for informing and evaluating patient safety competence concepts among nursing students in the classroom and clinical settings.

PURPOSE

The purpose of this study was to investigate the differences in patient safety competencies between the classroom and clinical settings among nursing students.

METHODS

Design and samples

This study used a descriptive method with an online survey. The samples were nursing students at the undergraduate program and professional program in a public university in Indonesia who had undertaken clinical practices in the hospital for at least six months and agreed to participate. The total samples were 181 students, consisting of 63 third-year students, 69 fourth-year students, and 49 professional nursing students. Stratified random sampling was used to select the samples.

Ethical consideration

This study was approved by the research ethics committee from the Faculty of Medicine Diponegoro University and Dr. Kariadi Hospital (No. 538/EC/FK-RSDK/VII/2018).

Instrument and data collection

Data were collected using Google forms that were distributed to the students by the assistance of students' peer coordinators. The first page on the online form contained information regarding the objectives and benefits of the study, as well as informed consent and procedures on how to fill out the questionnaire.

This study used the 2012 version of the Health Professional Education in Patient Safety Survey (H-PEPSS) developed by Dr. Liane Ginsburg from Canada. This instrument was designed as a self-assessment tool to find out knowledge and self-assessment related to six socio-cultural aspects of patient safety in classroom and clinical learning. The domain includes working in teams (6 questions), communicating effectively (3 questions), management of safety risks (3 questions), human and environmental

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understanding (3 questions), adverse events (4 questions), and culture of safety (4 questions). In addition to these six domains, there is another domain, clinical safety, which is a depiction of the daily clinical activities undertaken. Questions were assessed using a Likert scale from 1 (strongly disagree) to 5 (strongly agree). This instrument was chosen because of its wide scope in the healthcare profession for those who have just graduated, nearing completion of the professional education process, or undergraduate students (Usher et al., 2017).

This instrument is originally in English. A back-to-back translation was conducted from English to Indonesian, and vice versa. The Cronbach's alpha scores showed 0.81 for classroom learning and 0.85 for clinical learning (Ginsburg, Castel, Tregunno, & Norton, 2012). In 2017, Usher tested the questionnaire and obtained higher scores than the original value of 0.885 for classroom learning and 0.892 for clinical learning (Usher et al., 2017). Other questions in the questionnaire asked about demographic data which include gender, age, and year of the study. The completion of the questionnaire took 10-15 minutes.

Data analysis

Statistical analysis was performed using SPSS with $p<0.05$ as a significant value. Demographic data were processed using descriptive statistical analysis. In addition, the differences between study years and patient safety dimensions were analyzed using the paired t-test, ANOVA test, and independent t-test.

RESULTS

Characteristics of respondents

The number of respondents who completed the questionnaire was 181 in total. A majority of them were fourth-year students (38.1%) and females (91.2%) (Table 1).

Table 1. Characteristics of respondents

No	Students' characteristics	*f*	%
1	Student group:		
	Professional program students	49	27.1
	4th-year students (2014)	69	38.1
	3rd-year students (2015)	63	34.8
2	Gender		
	Female	165	91.2
	Male	16	8.8

Dimensions of patient safety in the classroom and clinical learning

Table 2 shows that students have different scores of patient safety domains in the classroom setting and the clinical setting for most domains. The results were significant except for human and environmental factors and adverse events. The highest two mean scores in the classroom and clinical setting were clinical safety and communicate effectively. Besides, the lowest score, both in the classroom and clinical learning, was the adverse events.

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Table 2. The comparison of the score in the classroom – clinical learning

Patient safety domain	Setting	*N*	*M*	*SD*	*p-value*
Clinical safety	Class	132	4.36	0.60	0.002*
	Clinic	181	4.19	0.69	
Working in teams	Class	132	4.06	0.58	0.000*
	Clinic	181	3.82	0.70	
Communicating	Class	132	4.29	0.51	0.000*
	Clinic	181	4.12	0.65	
Managing safety risks	Class	132	4.08	0.59	0.010*
	Clinic	181	3.97	0.63	
Human and environmental	Class	132	4.08	0.62	*0.173*
	Clinic	181	4.01	0.69	
Adverse events	Class	132	4.03	0.56	0.003*
	Clinic	181	3.87	0.65	
Cultural safety	Class	132	4.06	0.63	*0.086*
	Clinic	181	3.98	0.69	

*indicates a significant value

Table 3 shows that the third-year students' classroom learning had a higher mean value than the fourth-year ones except for the domains of clinical safety, managing safety risk, and culture of safety. However, in classroom learning, the significant value was only in the domains of managing safety risk and culture of safety.

Table 3. The comparison of the scores in classroom learnings among student groups

Patient safety Domain	Classroom Learning		
	3rd year	4th year	t-test
	M (SD)	*M(SD)*	*p*
Clinical safety	4.3 (0.6)	4.4 (0.5)	0.659
Working in teams	4.1 (0.4)	3.9 (0.6)	0.077
Communicating	4.3 (0.5)	4.2 (0.5)	0.070
Managing safety risks	4.0 (0.6)	4.2 (0,5)	0.004*
Human and environmental	4.1 (0.5)	4.0 (0.7)	0.118
Adverse events	4.1 (0.5)	4.0 (0.6)	0.102
Cultural safety	4.0 (0.7)	4.1 (0.5)	0.020*

*indicates a significant value

Table 4 shows the difference in clinical learning between each student group. The results showed that clinical students (professional program) had the highest mean values in all domains, followed by third and fourth-year students. The results of self-assessment in this clinical learning were found to be significant in all domains.

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Table 4. The comparison of the scores in clinical learnings among student groups

Patient safety domains	Clinical Learning				
	3rd Year	4th Year	Clinical students	ANOVA	
	M(SD)	*M(SD)*	*M(SD)*	*F*	*p*
Clinical safety	4.2 (0.7)	4.1 (0.6)	4.5 (0.4)	5.66	0.004
Working in teams	4.0 (0.5)	3.6 (0.8)	4.1 (0.5)	9.29	0.000
Communicating	4.3 (0.5)	3.9 (0.7)	4.4 (0.5)	9.18	0.000
Managing safety risks	4.1 (0.6)	3.8 (0.6)	4.1 (0.6)	5.29	0.006
Human and environmental	4.1 (0.6)	3.9 (0.8)	4.2 (0.6)	3.89	0.022
Adverse events	4.0 (0.6)	3.8 (0.7)	4.1 (0.5)	5.70	0.004
Culture of safety	4.1 (0.6)	3.9 (0.8)	4.2 (0.5)	5.28	0.006

DISCUSSION

This study aimed to investigate the differences in patient safety competencies between classroom and clinical settings among nursing students. The results of self-assessment showed that differences between the classroom and clinical learning were evident. The clinical safety and effective communication dimensions were the two highest scores in the classroom-clinical learning. Meanwhile, dimensions of recognizing and responding to adverse events, working in teams, and cultural safety showed low self-perceptions.

Academic education is organized to provide theoretical and skill preparations, while clinical education helps students have direct experience to make decisions related to the actual condition of patients according to the knowledge that has been learned in class (Aktaş & Karabulut, 2016). Previous studies have shown that if the quality of clinical learning increases, motivation in academic learning also increases (Aktaş & Karabulut, 2016; Arkan, Ordin, & Yılmaz, 2018). The success of clinical learning is influenced by various factors such as individual factors, clinical instructors, academic instructors, and physical environment (Günay & Kılınç, 2018). Personal experience is an individual factor that affects the success of clinical learning. What might have happened is a failure to connect the theoretical science taught in classroom learning to the clinical realm (Arkan et al., 2018). Students may receive broad theoretical knowledge from the school, but they cannot apply the knowledge obtained in actual practice (Günay & Kılınç, 2018).

The study found that fourth-year students had lower self-ratings related to patient safety competencies than the third-year students in all dimensions of patient safety. These results indicated that lower year students have a higher rating than those students with a higher academic year. The same case is also found in some studies reporting that lower year students have higher self-assessment scores than the higher ones (Duhn, Karp, Oni, Edge, Ginsburg, & VanDenKerkhof, 2012; Kajander-Unkuri et al., 2014). Such a situation may happen due to a lack of students' understanding related to patient safety, causing ignorance when there is something missing from the understanding and actions taken (Duhn et al., 2012; Ng et al., 2017; Sullivan, Hirst, & Cronenwett, 2009). Gaps between academic and clinical knowledge also influence the way a person views patient safety issues (Usher et al., 2017). These theories explain why third-year students have

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better self-assessments since they have not gone through clinical experiences as much as fourth-year students.

This study also found that students had excellent results of self-assessment in the clinical safety domain both in the classroom or clinical learning. This domain is a non-sociocultural aspect that focuses on hand hygiene and infection control (Ginsburg, Tregunno, & Norton, 2013). This result shows that students understand well every aspect of clinical safety that they have learned since the beginning of their study. Another reason is that this material is very popular in the health promotion programs that students present as counseling materials in the community (Duhn et al., 2012).

The results also showed that effective communication was highly rated in this study. This result is consistent with a previous study reporting that nursing students have a good assessment of effective communication skills (Duhn et al., 2012; Ginsburg et al., 2013). Students judged themselves to be able to carry out effective communication, especially to patients. Previous research stated that new nurses have confidence in their ability to communicate with doctors, patients, and families over time (between 6 - 12 months). In this study, students have previously gone through clinical practice for a cumulative duration of six months (Pfaff, Baxter, Jack, & Ploeg, 2014).

Students showed a lack of self-assessment on recognizing and responding to adverse events, working in teams, and cultural safety. The domain of working in team focuses on managing inter-professional conflicts, power-sharing, and team dynamics (CPSI, 2009). This study showed similar results to previous research by Ginsburg, reporting that nurses have the lowest self-assessment in clinical settings compared to other health workers (pharmacy and doctor) (Ginsburg et al., 2013). One of the reasons causing a decrease in self-assessment in clinics is the low self-assessment of students in managing conflicts between professions. This conflict generally arises due to the paradigm of the dominance of the medical profession in health organizations (Sollami, Caricati, & Mancini, 2018). However, this paradigm can be slowly reduced by the existence of interprofessional education programs that emphasize the alignment of the health profession in dealing with patients (Labrague, McEnroe - Petitte, Fronda, & Obeidat, 2018; Sollami et al., 2018).

This study has limitations. Not all respondents in the study completed the questionnaire for both classroom and clinical assessment due to time constraints. Further research should consider longer period of time for data collection. A study about factors affecting self-assessment patient safety competence could be taken into account to help identify practical solutions to develop better learning programs/curricula.

CONCLUSION

This study revealed that the patient safety competencies of nursing students were higher in the classroom setting than that in the clinical setting. The patient safety competencies need to be improved in the education system through supervision and control. The curriculum needs to consider more learning on other aspects of patient safety, such as recognizing and responding unwanted events. Effective education and teaching should also be promoted to enhance higher inter-professional skills and communication skills

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among nursing students. Future studies may consider to investigate the factors that increase patient safety competence among nursing students in the clinical setting.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Deep Breathing Exercise and Active Range of Motion Influence Physiological Response of Congestive Heart Failure Patients

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ABSTRACT

Background: Dyspnea and physiological changes are clinical manifestations of Congestive Heart Failure (CHF) due to respiratory failure. Deep breathing exercise combined with active range of motion increases respiratory muscles and blood circulation. As a result, it reduces breathing effort and decreases blood pressure.
Purpose: This research aimed to analyze the influence of deep breathing exercise and active range of motion (ROM) on the physiological response of CHF patients.
Methods: This study used a quasi-experiment with pretest-posttest control group design recruiting 32 respondents by stratified random sampling technique. The intervention was done three times a day for three days. Deep breathing exercise for thirty times and continued with active range of motion for five times each movement. Digital sphygmomanometer and digital watch were used as measuring instruments. Data were analyzed using independent and paired t-tests.
Result: The results showed that there were significant differences in the systole (p=0.000), diastole (p=0.000) and respiratory rates (p=0.003) after the intervention compared to the control group. There was also a significant difference in systolic blood pressure between the intervention and the control group (p=0.003). However, no significant difference in diastole and respiratory rates was found.
Conclusion: Deep breathing exercise combined with active range of motion decreases the systole in CHF patients. Further research is expected to lengthen the time of intervention to allow better significance.

Keywords: Active range of motion; CHF; deep breathing exercise; physiological response

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BACKGROUND

Heart and blood vessel diseases are one of the major health problems in both developed and developing countries. This disease is the first leading cause of death in the world, and the prevalence is estimated to continually increase up to 23.3 million in 2030 (Ministry of Health Republic of Indonesia [MoHRI], 2014; Yancy et al., 2013). Similar phenomena also occur in Indonesia. The result of Basic Health Research (*Riskesdas*) by the Ministry of Health, Republic of Indonesia in 2013 reported that the prevalence of heart failure in Indonesia reached 0.3% (MoHRI, 2013). The highest prevalence in Java island occurs in Yogyakarta Province, with the percentage of 0.25 % (MoHRI, 2014). The increasing prevalence will cause problems for diseases, disabilities, and socio-economic problems for family, communities, and the state (MoHRI, 2014; Ziaeian & Fonarow, 2016). Therefore, comprehensive management for heart failure, especially symptom management, needs to be addressed.

Dyspnea is a hallmark symptom of Congestive Heart Failure (CHF). Dyspnea impairs functional capacity and quality of life. Dyspnea caused by ventricular dysfunction causes decreased cardiac output and increased pulmonary venous pressure resulting in pulmonary congestion. This ultimately leads to extravasation of fluid into the interstitial space and lung alveoli, which reduces pulmonary compliance and impairs the ease of breathing. Patients who have the NYHA functional class of III-IV will be having high levels of dyspnea complaints (Kupper, Bonhof, Westerhuis, Widdershoven & Denollet, 2016). Patients with NYHA IV will be panting every day, even during mild activity or at rest. This is because dyspnea affects the decrease in tissue oxygenation and energy production, so that patient's daily activity will also decrease, which can lower the quality of patients' life (Sepdianto & Maria, 2013). The pharmacological management provided for these patients includes cardiac glycoside, diuretic therapy, and vasodilator therapy (Shah, Gandhi, Srivastava, Shah, & Mansukhani, 2017). However, studies in the form of systematic review and meta-analysis revealed that heart failure rehabilitation is recommended for low and moderate risk of heart failure (NYHA II and III) (Sagar et al., 2015).

Cardiac rehabilitation can be useful in clinically stable patients with heart failure (Yancy et al., 2013). The American Heart Association recommends physical exercise to be performed in patients with stable CHF. Physical exercise is done 20-30 minutes with a frequency of 3-5 times each week. Before beginning physical exercise, patients with CHF require a comprehensive assessment of risk stratification and are recommended to rest due to fatigue. This exercise is one of the hospitalized exercises (inpatient) that can be performed to the patients with NYHA II and III. Gradual activity management in such patients is a mild and regular physical activity so that peripheral blood circulation and tissue perfusion conditions can be improved (Adsett, Hons & Robbie, 2010; Alvarez, Hannawi & Guha, 2016). Moreover, giving position and breathing exercises can be done to reduce effort and improve respiratory muscle function. Tolerable exercise can be managed to improve tissue perfusion and facilitate circulation. Exercise training or regular physical activity is recommended as safe and effective for patients with heart failure (Yancy et al., 2013).

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Breathing exercise is an exercise to improve breathing and functional performance (Cahalin & Arena, 2015). One of the breathing exercises that can be done is a deep breathing exercise, a nursing activity, that serves to increase the function of respiratory muscles resulting in ventilation and oxygenation improvement (Bulechek, Butcher, Dochterman, & Wagner, 2013; Herdman, Kamitsuru, & North American Nursing Diagnosis Association, 2014; Kupper et al., 2016). Sepdianto and Maria (2013), in their study, reported that breathing exercise in patients with heart failure for 15 minutes as many as three times a day within 14 days reduces dyspnea. A systematic review of 27 studies also showed that physical exercise could increase oxygen saturation and quality of life of patients with heart failure (Jewiss, Ostman, & Smart, 2016). Therefore, it is important to conduct a study to examine the influence of breathing exercise and active range of motion in CHF patients.

The use of deep breathing exercises and active range of motion as a nursing intervention in CHF patients has not been widely studied in Indonesia. There are no studies that combine the two interventions. This encourages researchers to study the effect of deep breathing exercise and active range of motion on dyspnea in CHF patients.

PURPOSE

This research aimed to examine the effect of deep breathing exercises combined with an active range of motion on physiological response in CHF patients.

METHODS

Research design and samples

The study used a pretest-posttest quasi-experimental research design with a control group, and was conducted in two hospitals in Yogyakarta, Indonesia. A stratified random sampling method was utilized to recruit the samples of NYHA II and III CHF patients who met the inclusion criteria, which were stable hemodynamic status, no weakness in both extremities, more than 17 years old, and receiving the same pharmacological treatment. Whereas, the exclusion criteria included the patients with neuro-musculoskeletal, severe systemic, mental and communication disorders, and respiratory diseases. As many as thirty-two respondents who met the inclusion and exclusion criteria were recruited. They were then divided into the equally same number between the intervention and control groups.

Research instrument and data collection

The instruments used in this study were digital sphygmomanometer and digital watch to measure blood pressure and respiratory rate. Pre-test and post-test on both groups were conducted in the first and third days, respectively. All respondents in both groups were measured their blood pressure and respiratory rates. The pre-test measurements were performed 15 minutes before the intervention began, while the post-tests were done 15 minutes after the intervention ended. Interventions were initiated after 48 hours of hospital admission. The intervention was started by deep breathing exercises for 30 times, followed by an active range of motion gradually on the hands, legs, hips, and knees with each movement performed for five times. This intervention was done three times a day for three days. On the other hand, the control group obtained standard intervention, which was a semi-fowler position.

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Data analysis

A paired t-test was used to analyze the mean difference before and after the intervention, while an independent t-test was used to compare the mean differences between the intervention and the control groups.

Ethical consideration

Prior to the study, all respondents expressing agreement to participate in the study were informed of the objectives, benefits, and procedures of the research. They were also requested to sign informed consent. In terms of the privacy and confidentiality of respondents, providing training fairly, benefits, and avoiding dangerous actions were ensured during the study. This research had been reviewed and obtained ethical permission from the ethics and research committee in the Faculty of Medicine, Diponegoro University, Semarang, Indonesia, with the number of ethical approval of 202/EC/FK-RSDK/IV/2017.

RESULTS

Characteristics of respondents

The results of the study showed that more than half of the respondents in the intervention and the control group were women and aged more than 60 years. A majority of the respondents in both groups had common co-morbidities, which were hypertension. The proportion of respondents who had NYHA II was the same as NYHA III in both groups (50%), while most respondents in both groups obtained diuretic drugs (Table 1).

Table 1. Characteristics of respondents (n=32)

Characteristic	Intervention *f* (%)	Control f (%)	Total *f* (%)	*p*
Age				
18 – 45 years old	2 (12.5)	2 (12.5)	4 (12.5)	
46 – 60 years old	3 (18.8)	6 (37.5)	9 (28.1)	0.132*
> 60 years old	11 (68.7)	8 (50.0)	19 (59.4)	
Gender				
Man	7 (43.8)	7 (43.8)	14 (43.8)	0.341**
Woman	9 (56.2)	9 (56.2)	18 (56.2)	
Co-morbidities				
Hypertension	10 (62.4)	7 (43.7)	17 (53.1)	
Diabetes mellitus	3 (18.7)	4 (25.0)	7 (21.9)	
Kidney failure	1 (6.3)	3 (18.7)	4 (12.6)	0.333*
Anemia	1 (6.3)	1 (6.3)	2 (6.2)	
Gastritis	1 (6.3)	1 (6.3)	2 (6.2)	
NYHA class				
NYHA II	8 (50.0)	8 (50.0)	8 (50)	1.000**
NYHA III	8 (50.0)	8 (50.0)	8 (50)	
Pharmacological therapy				
Diuretic	6 (37.5)	8 (50.0)	14 (43.7)	
Vasodilator	3 (18.8)	5 (31.3)	8 (25.0)	0.242*
Diuretic and vasodilator	7 (43.8)	3 (18.8)	10 (31.3)	

*Mann-Whitney Test **Chi-Square

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Effects of deep breathing exercise and active range of motion on blood pressure in CHF patients

The analyses of the effects of deep breathing exercise and active range of motion on physiological responses, including systole and diastole in the intervention group and control group, were shown in Table 2 and Table 3. There was a higher decrease in the mean of systole and diastole after the intervention compared to the control group. There were also significant differences in the systole (*p*=0.000) and diastole (*p*=0.000) in the intervention group (Table 2).

Table 2. Differences in blood pressure of CHF patients (n=32)

Blood pressure	Control Group			Intervention Group		
	Mean±SD	t	*p*	Mean±SD	t	*p*
Systole						
Pre-test	128.31±25.34	1.877	0.080*	128.25±16.97	6.483	0.000*
Post-test	123.00±33.31			110.19±16.46		
Diastole						
Pre-test	74.88±20.14	1.338	0.201*	73.50±10.49	4.748	0.000*
Post-test	70.44±16.57			65.03±10.27		

*paired t-test

As seen in Table 3, there was a significant difference in the mean difference of systolic blood pressure between the intervention and the control group (*p*=0.003). However, the mean difference of diastole was not significantly different between the groups (*p*=0.296). It meant that deep breathing exercises combined with active range of motion decreased the systole, yet the diastole compared with the hospital standard care.

Table 3. Effects of deep breathing exercise and active range of motion on blood pressure of CHF patients (n=32)

Blood pressure	Intervention Group	Control Group		
	Mean±SD	Mean±SD	*t*	*p*
Systole				
Pre-test – Post-test	18.06±11.14	5.31±11.32	3.210	0.003*
Diastole				
Pre-test – Post-test	8.44±7.11	4.44±13.26	1.063	0.296*

*independent t-test

Effects of deep breathing exercise and active range of motion on respiratory rate in CHF patients

The analyses of the effect of deep breathing exercise and active range of motion on the respiratory rate of CHF patients in the intervention group and control group can be seen in Table 4 and Table 5. Table 4 shows that respiratory rates in the intervention group decreased significantly (*p*=0.003) compared to the control group (*p*=0.417).

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Table 4. Differences in respiratory rates of CHF patients (n=32)

Respiratory Rate	Control Group			Intervention Group		
	Mean±SD	*t*	*p*	Mean±SD	*t*	*p*
Pre-test	27.00±2.31	0.835	0.417	25.44±3.14	3.503	0.003*
Post-test	26.00±3.72			22.44±1.36		

*paired t-test

The decrease in respiratory rates in the intervention group (3.00±3.43) was higher than the control group (1.00±4.79). However, there was no significant difference in the respiratory rates between the intervention and the control group (p=0.184). This meant that deep breathing exercises and active range of motion were less effective at reducing respiratory rates than the hospital-based interventions (Table 5).

Table 5. Effect of deep breathing exercise and active range of motion on the respiratory rate in CHF patients (n=32)

Respiratory rates	Intervention Group	Control Group		
	Mean±SD	Mean±SD	*t*	*p*
Pre-test – Post-test	3.00±3.43	1.00±4.79	1.359	0.184*

*independent t-test

DISCUSSION

Effects of deep breathing exercise and active range of motion interventions on physiological response: Blood pressure in CHF patients

The results of this study showed that deep breathing exercises and active range of motion significantly decreased the systole, but the diastole compared to the standard care from the hospital. The results of previous studies also showed similar results that breathing exercises were able to reduce systolic blood pressure by 3 mmHg (p=0.021) and diastolic pressure by 6.2 mmHg (p=0.000) in patients with heart failure within 14 days (Sepdianto & Maria, 2013). Another research also revealed that three-week breath exercises were capable of decreasing systolic 5.9±0.8 (p<0.001) and diastolic 1.4±0.8 (p<0.005) (Lee et al., 2003). A study conducted by Joseph et al. (2005) also showed that controlled breathing decreased systolic and diastolic from 149.77±3.7 to 141.1±4 mm Hg (p<0.05) and from 82.7±3 to 77.8±3.7 mm Hg (p<0.01). Futhermore, Jewiss et al. (2016) also pointed out that physical exercise could increase oxygen saturation and quality of life of patients with heart failure.

Deep breathing exercises in patients with heart failure can improve cardiac autonomic regulation and decrease the sensitivity of chemoreceptors. This exercise will increase left ventricular ejection fraction, decrease pulmonary pressure, and decrease pulmonary edema. This may be due to an increased ventilator mechanism due to the regulation or modulation of cardiopulmonary reflex (Parati et al., 2008). In addition, a range of motion is a physical exercise that can affect blood pressure because the efficiency of the heart or the ability of the heart will increase in accordance with the changes that occur in the form of heart frequency, stroke contents, and bulk heart. Regular physical exercise is done 3-5 times a week with a long exercise of 20-60 minutes once exercise,

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and it can lower blood pressure. The decrease in blood pressure, among others, occurs because the blood vessels undergo dilation and relaxation (Arovah, 2010; Badriyah, Kadarsih, & Yogyakarta, 2014). The finding showed that there was no significant difference in the diastole between the intervention and the control group. This insignificant difference might due to the small sample size.

Effects of deep breathing exercise and active range of motion interventions on physiological response: Respiratory rate in CHF patients

The result shows that deep breathing exercises and active range of motion decreased respiratory rates, although the decrease was not statistically significant compared to the control group. This was consistent with previous studies. A study showed that breathing exercise could decrease the frequency of breath (p<0.001) (Sepdianto & Maria, 2013). Joseph et al. (2005) also reported that controlled breathing decreases respiratory rates with p <0.05.

Respiratory exercises are performed to improve ventilation and oxygenation. Increased lung compliance during respiratory exercise may cause the amount of air entering the lungs to increase, resulting in lower respiratory frequency. Needs of oxygen are met then the tolerance to the activity will increase. Decreased frequency of breathing after intervention proves that there is an improvement in respiratory function. Breathing exercises can optimize lung development and minimize the use of respiratory muscle. By doing regular breathing exercises, the respiratory function will improve. It was found to be optimal for improving alveolar ventilation in terms of increased arterial oxygen saturation and ease and sustainability in terms of respiratory effort (Russo, Santarelli, & O'Rourke, 2017).

Slow respiration in healthy humans reduces the chemoreflex response to hypercapnia and hypoxia. Deep breathing can improve lung development capability and affect perfusion and diffusion functions so that the oxygen supply to the tissues is adequate. Lower pressure on the intrathorac will cause air to flow from the more atmospheric pressure high entry into the lungs that have lower pressure as a gas exchange process or lung ventilation (Cahalin & Arena, 2105).

Moreover, physical exercise will affect oxygen consumption and carbon dioxide production. A large amount of oxygen will diffuse from the alveoli into the venous blood back to the lungs. Conversely, the same levels of carbon dioxide enter from the blood into the alveoli (Jewiss et al., 2016). Thus, ventilation will increase to maintain appropriate alveolar gas concentrations to allow for increased exchange of oxygen and carbon dioxide. As the exercise progresses, increased metabolic processes in the muscle produce more heat, carbon dioxide, and hydrogen ions. This whole factor increases the oxygen utilization in the muscle, which increases arterial oxygen as well. This results in more carbon dioxide entering the blood, increasing the levels of carbon dioxide and hydrogen ions in the blood. Chemoreceptor stimulates the inspiratory center resulting in increased breathing and depth. Some researchers have suggested that chemoreceptor in the muscle may also be involved that is by increasing ventilation by increasing tidal volume. However, after the resting phase, the need for oxygen in the blood will be

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fulfilled to lower the frequency of breathing (Nagaya, Hayashi, Fujimoto, Maruoka, & Kobayashi, 2015).

The result of the study showed an insignificant decrease in the respiratory rates between the intervention and the control group. This might occur due to the short duration of the intervention time and the affecting factors which could not be totally controlled. Despite the limitations, this study could show the evidence that deep breathing exercises and active range of motion decreased the systole, diastole, and respiratory rates.

CONCLUSION

The study found that deep breathing exercises and active range of motion reduced the systole, diastole, and respiratory rates. However, the reduction in the systole was the only statistically significant finding compared to the diastole and respiratory rates. Although there was no significant difference in diastole and respiratory rates between the intervention and the control group, the intervention group showed better value than the control group. Further research on the effects of deep breathing exercise and active range of motion is recommended to conduct by extending the intervention time and utilizing a larger sample size.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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English Language Proficiency and Its Relationship with Academic Performance and the Nurse Licensure Examination

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ABSTRACT

Background: Studies have shown that various factors influence students' success in nursing school and the Nurse Licensure Examination (NLE). Such factors should be studied as foundations of the nursing programs. Problems with proficiency in the language used by the instructor to teach curricular courses may be considered a barrier to effective learning and academic success.
Purpose: This study ascertained the influence of English language proficiency on the academic performance of students in professional nursing courses and the NLE.
Methods: This study employed a retrospective descriptive correlational study design. Secondary analysis of existing research data sets of 141 nursing students in one nursing school in the Philippines was performed. Pearson's r was used to determine the correlation between variables.
Results: Findings showed that there were significant correlations between academic performance and the Verbal Ability subscale of the Nursing Aptitude Test (p=0.003) and the three English courses included in the nursing curriculum (p=0.000). There were also significant correlations between the NLE ratings and Verbal Ability (p=0.000) and the three English courses (p=0.000).
Conclusion: English language proficiency is an important factor in determining the academic and licensure success of nursing students. Nursing schools must ensure that approaches in improving students' English language proficiency must be well integrated into the undergraduate nursing program.

Keywords: Academic performance; English language proficiency; English competency; licensure exam; nursing

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BACKGROUND

English is the 'operating system' of the global conversation spoken by a quarter of the world's population (British Council, 2013). It is the language of diplomacy, business,

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education, engineering, law, and healthcare (Cabigon, 2015; Nishanti, 2018). With the impact of globalization and economic development, command in the English language is vital for those who work in the global workforce.

The Philippines is acknowledged globally as one of the biggest English-speaking nations. Proficiency in the English language is also one of the country's assets that helped the country's economy (Cabigon, 2015). The Philippines is considered one of the top outsourcing destinations of foreign healthcare workers worldwide (Ubas-Sumagaysay & Oducado, 2020; Yeates & Pillinger, 2018). However, concern on the narrowing competitive advantage of the country was raised despite that the country is doing fine in terms of English competency (Cabigon, 2015). Recent studies are showing that the Filipinos' grasp of the English language requires an area of concern. Results of an online Standard English Test (SET) revealed a declining trend in the English language skills of Filipinos (Education First, 2019). A Philippine Senate Resolution 622 (2018) was filed in 2018 calling for an inquiry into the declining proficiency in English among Filipino students citing reports from Hopkins International Partners and the Common European Framework of Reference for Languages. The Hopkins International Partners study revealed that college graduates in the Philippines had lower English proficiency level than the proficiency target set for high school students in Thailand and the taxi drivers in Dubai. Moreover, the Common European Framework of Reference for Languages reported that the median score of Filipino university graduates was comparable only to the proficiency level of 5th and 6th graders in countries wherein English is the native language. There was also news that reported that many Filipino nurses failed the English proficiency test required to qualify for employment in a hospital in London (Byrne, 2017).

Internationally educated nurses or nurses from countries outside of the United States of America (USA), United Kingdom (UK), and Australia, to name a few, are required to take an English test or provide proof of English language skills prior to employment. It has been established that the tests used for estimating future job performance should be administered in the language used in the job because those with inadequate competence in that language may also perform poorly either on the test, on the job, or both (O'Neill, Marks, & Liu, 2006). In other words, the low English proficiency of Filipino nurses may negatively affect their future job performance or employment when they work in English-speaking countries.

The value of the English language in the Philippine educational system cannot be overemphasized. While Filipino is considered as the national language, the official languages of the country for purposes of communication and instruction are Filipino and English, as stated in the 1987 Philippine Constitution. Globally, in developing and even in some developed countries, a language other than the students' mother tongue is used in all levels of the educational system (Civan & Coşkun, 2016). The English language is widely used in the field of education, especially in highly technical fields like nursing. English as a medium of instruction has been adopted for decades by Philippine nursing schools. Published academic research and major references used in nursing schools in the country are written mostly in English. It is said that the language of instruction plays

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an essential role in facilitating learning of course contents and in teaching the subject (Ibrahim, Shafaatu, & Yabo, 2017).

Understanding the performance of students in nursing school and the licensure examination are important to identify students who are at risk of not performing well (Oducado, 2019). Past researches have shown that various factors influence nursing students' academic performance (Belo-Delariarte, Oducado, & Penuela, 2018; Mthimunye & Daniels, 2019; Mthimunye & Daniels, 2020) and success in the licensure examination in countries like Kenya (Okanga, Ogur, & Arudo, 2017), Ghana (Amankwaa, Agyemang-Dankwah, & Boateng, 2015), USA (Kim, Nikstaitis, Park, Armstrong, & Mark, 2019) and the Philippines (Oducado, Cendaña, & Belo-Delariarte, 2019b). Prior studies indicated that English language proficiency influences the academic performance of nursing students in the Philippines (Oducado & Penuela, 2014) and Kuwait (Vidal, Labeeb, Wu, & Alhajraf, 2017). Students who had high self-reported English language proficiency were also found to have the highest GPA in a study among international university students in the USA (Martirosyan, Hwang, & Wanjohi, 2015). It was also established that performance in academic influences performance in the NLE (De Leon, 2016; Oducado et al., 2019b; Soriano, 2016). However, despite the positive impact of English language proficiency on academic success, there are reported concerns on the potential negative effects on the learning process and students' academic achievement when the medium of instruction or language used to teach the subject is a language different from the mother or native tongue of the learners or students (Civan & Coşkun, 2016). This may be true within the multi-lingual context of the Philippines and in the setting of this study wherein English is the medium of instruction, and Hiligaynon is the local dialect spoken by most of the study sample. Nursing students with English as an additional language or English as a second language (ESL) may experience more learning challenges and may not perform well academically (Glew, Hillege, Salamonson, Dixon, Good, & Lombardo, 2015; Salamonson, Everett, Koch, Andrew, & Davidson, 2008). The study of Green (2015) relayed that ethnicity and English proficiency were predictors of academic performance and progress. Language barriers were also identified as a significant barrier faced by ESL nursing students in a critical review of the literature (Olson, 2012).

While a number of scholars have investigated the association between English language proficiency and academic performance, literature is scarce on the relationship between English proficiency and NLE in the Philippines. Lack of English proficiency may be an impediment to students' academic success and in acquiring nursing knowledge and skills to produce globally competitive nursing graduates. Understanding the influence of English language proficiency on the academic performance in professional nursing courses and the NLE is thereby necessary.

PURPOSE

The purpose of this study was to investigate the influence of English language proficiency on nursing students' academic performance in professional nursing courses and the NLE at one baccalaureate nursing program.

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METHODS

Research design

This study utilized a retrospective, descriptive-correlational design. A secondary analysis of existing data sets was performed. Secondary analysis “refers to the use of existing research data to find answer to a question that was different from the original work” (Tripathy, 2013).

Participants

The researchers analyzed secondary data of 141 nursing graduates at one baccalaureate nursing program in the Philippines. Power analysis using G*Power 3.1 software revealed that 115 is the required sample size given an alpha of .05, power of .95, and medium effect size of .3. The researchers, however, decided to include all 141 students in the analysis since data were readily available to the researchers. Students with complete records of the variables of the research and took the NLE in May 2015 were included. Those who repeated any of their courses in the program were excluded from the analysis.

Research instrument and data collection

Two measures were used to determine the English language proficiency of students: Verbal Ability and grades in English courses. The Verbal Ability subscale of the Nursing Aptitude Test (NAT) was used to measure the pre-admission English language proficiency of students. The result of the NAT was obtained from the Center for Educational Measurement, Inc. (CEM), the center that administered the NAT, as part of the qualifying admission requirements to incoming first-year nursing students in the college. In general, the NAT, a standardized test, gives an estimate of the student's mental abilities in the areas of Verbal Ability, Numerical Facility, Science, and Health Information (CEM, n.d.; Oducado & Penuela, 2014). The Verbal Ability subtest is composed of 60 items in a multiple-choice format measures proficiency or ability in the English language with content areas of verbal analogies and vocabulary and has a reported reliability coefficient of greater than .70 (CEM, n.d.). The Verbal Ability standard scores were interpreted as follows: 676-800 = Excellent; 626-675 = Superior; 576-625 = Above average; 526-575 = High average; 476-525 = Average; 426-475 = Low average; 376-425 = Below average; 326-375 = Poor; 200-325 = Very poor. Grades in the three (3) English courses (ENG 101, ENG 102, & ENG 103) included in the Bachelor of Science in Nursing (BSN) curriculum were used to measure the English proficiency of students in nursing school. The grades on English subjects and professional nursing courses were obtained from the Transcript of Records of the students originally taken from the University Registrar. The nursing curriculum in the Philippines comprises both general education courses and professional courses. A total of 21 professional nursing courses reflected in the Commission on Higher Education Memorandum Order 14 series of 2009 BSN curriculum (Commission on Higher Education, 2009) were analyzed. For this study, only the average grades obtained by the students in both theoretical classroom instructions and Related Learning Experiences (RLEs) (Oducado, Amboy, Penuela, & Belo-Delariarte, 2019a) in all professional nursing courses were used as a measure of academic performance. To interpret the grades in English subjects and professional nursing courses, the following were used: 1.50-1.74 = Outstanding; 1.75 - 1.99 = Very good; 2.00-2.24 = Good; 2.25-2.49 = Very

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satisfactory; 2.50-2.74 = Satisfactory. Data on the NLE ratings of the students were originally requested from the Philippine Professional Regulatory Commission and were interpreted as: 79.99 and below = low; 80-84.99 = average; 85 and above = high.

Statistical data analysis

Data analysis was aided by IBM SPSS version 23. Percentage, mean, and standard deviation (SD) were used to describe the data. Pearson product-moment correlation coefficient tested for the relationship between variables since data was found to be normally distributed with sig. value of Kolmogorov-Smirnov Test greater than .05. The level of significance was set at 0.05 alpha.

Ethical considerations

All secondary data remained confidential, were kept safe from unauthorized access, and were only made available to the researchers. The original research where the data were taken was granted an exemption by the ethics review committee of the University. Administrative clearance from the Dean of the College of Nursing was secured to conduct this secondary analysis.

RESULTS

Participants' profile

Nursing students who participated in this study were graduates of the four-year baccalaureate nursing degree program in one state-funded public university in the Philippines. The majority of subjects of the study were females (*f*=123; 87.2%). They were typically between 20 to 21 years old when they took the NLE.

English language proficiency of nursing students

Table 1 shows that the majority of nursing students had an above-average (*M*=612.68; *SD*=60.65) English language proficiency in the Verbal Ability subscale of the NAT. In terms of English language proficiency in nursing school, nursing students had a very good performance in ENG 101 or Intensive English Grammar (*M*=1.76; *SD*=0.29) and had an outstanding performance in ENG 102 or Study and Thinking Skills in English (*M*=1.58; SD=0.21) and ENG 103 or Speech Communication *(M*=1.51; *SD*=0.25) respectively.

Table 1. English language proficiency of nursing students

English language proficiency	Mean	*SD*	Interpretation
Pre-admission			
Verbal Ability	612.68	60.65	Above average
Performance in English courses			
ENG 101 (Intensive English Grammar)	1.76	0.29	Very Good
ENG 102 (Study and Thinking Skills in English)	1.58	0.21	Outstanding
ENG 103 (Speech Communication)	1.51	0.25	Outstanding

Academic performance in professional nursing courses and the NLE

Table 2 displays the academic performance of nursing students in 21 professional nursing courses outlined the BSN curriculum and their performance in the NLE. It is

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shown in Table 2 that nursing students had a good (*M*=2.13; *SD*=21) performance in professional nursing courses and had an average (*M*=80.74; *SD*=1.95) performance in the NLE.

Table 2. Academic performance in professional nursing courses and the NLE

Variables	Mean	*SD*	Interpretation
Academic performance in nursing courses	2.13	0.21	Good
Performance in the NLE	80.74	1.95	Average

Relationship of English language proficiency to academic performance and NLE
Table 3 reflects the correlation between English language proficiency and nursing students' academic performance in professional nursing courses and NLE. Table 3 shows that Verbal Ability (*p*=0.003), ENG 101 (*p*=0.000), ENG 102 (*p*=0.000), ENG 103 (*p*=0.000) were significantly related to academic performance in professional nursing courses. It can also be gleaned in Table 3 that Verbal Ability (*p*=.0000), ENG 101 (*p*=0.000), ENG 102 (*p*=0.000), ENG 103 (*p*=0.000) were significantly related to performance or rating in the NLE.

Table 3. Correlation between study variables

English language proficiency	Academic performance		NLE performance	
	r	*p*	*r*	*p*
Verbal Ability	-0.252	0.003*	0.366	0.000*
ENG 101	0.692	0.000*	-0.541	0.000*
ENG 102	0.558	0.000*	-0.340	0.000*
ENG 103	0.538	0.000*	-0.362	0.000*

**significant if <0.05*

DISCUSSION

This research determined the influence of English language proficiency on academic performance and the NLE. This study found that nursing students in this study generally have good English language proficiency prior to admission in the college and while in nursing school. Additionally, this study revealed improvement in the English proficiency of students as reflected in their very good to outstanding grades from one English language course to another. Students having good command in the English language in this study may probably be due to the highly competitive admission policy of the college. As a state or government-funded university, only a limited number of students are admitted to the BSN program. Generally, the college is able to attract the best students within the region. Within the context of nursing, a high degree of English language proficiency is essential for effective communication to provide safe nursing care, to establish therapeutic relationships with clients, and to collaborate effectively as a member of the healthcare team (Alinezhad & Gholami, 2012; Garone & Van de Craen, 2017). The English language plays an important role and is useful in students' academic life. The use of English language for classroom instruction and in the students' RLEs requirements such as in case presentations, class reporting, and in documenting

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nurses' work may have contributed to the improvement of the verbal and written communication skills of student nurses in the English language.

Interestingly, the finding of this study and that of Racca & Lasaten (2016), which also found satisfactory English proficiency among Philippine Science High school students, are in contrast to the reports regarding the declining ability of Filipinos in the English language. The authors cannot be conclusive about the general or overall English proficiency of Filipino students. Bias in the sample may have been introduced, influencing the results of the study.

Moreover, this study demonstrated that English language proficiency is significantly correlated with academic performance. It must be noted that 1.0 is the highest grade obtained by the student in the grading system of the college. Hence, a low number or grade in academic performance indicates better performance or achievement. The finding of the study is generally consistent with other research findings among nursing students in the Philippines (Oducado & Penuela, 2014), nursing (Alharbi & Yakuot, 2018; Vidal et al., 2017) and medical (Kaliyadan, Thalamkandathil, Parupalli, Amin, Balaha, & Al Bu Ali, 2015) students in Saudi Arabia, medical students in Iran (Sadeghi, Kashanian, Maleki, & Haghdoost, 2013), and with pharmacy students (Green, 2015) among others. English-language acculturation was found to influence academic performance among first-year ESL nursing students (Salamonson et al., 2008). English reading comprehension ability was also found to positively influence academic achievement among Indian nursing students (Ponkshe, 2013). Students with better command in the English language were more likely to do better in their nursing courses. Since English is the medium of instruction, students who were more proficient in English were able to do better in writing, speaking, grasping and understanding the instructions and lessons given to them in professional nursing courses. Teaching the curricular content and having proficiency in the language used for instruction increases the learner’s amount of exposure and opportunities to understand the content of instruction hence students develop greater control over what is taught in class (British Council, n.d.) resulting to positive outcomes on students’ academic success.

This study also disclosed a significant relationship between English language proficiency and the NLE. Miñoza (2016) likewise found an association between English proficiency and licensure examination among agriculturists in the Philippines. Similarly, O'Neill et al. (2006) found a link between English proficiency and nursing licensure examination performance. The authors found that ESL examinees had a lower passing rate than English only candidates. This result suggests that an obvious issue in language competency may create an impact on the performance in the licensure examination. It also highlights the importance of proficiency in the language used in the target examination. Not having good ability in the language used in the examination may impede a better understanding of test item questions. Soriano and Lupdag-Padama (2009) found that reading proficiency was a factor influencing the performance of nursing graduates in the NLE. The findings of this study suggest that it is vital to take into consideration that students who are admitted into the BSN program have good English language competency. Likewise, academic nursing institutions should promote students' skills in the English language in both academic and clinical settings to

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safeguard students' academic success in nursing school and the licensure examination. Providing students with academic guidance remains a vital aspect of nursing education (Oducado, Frigillano, Gunce, Jover, Meliton, & Pangilinan, 2017).

This study has its limitations. The data used were only secondary data in one college of nursing, thus limits the generalizability of the findings. Another limitation is that the English proficiency measure used in this study did not specifically assess English skills in the dimensions of reading, writing, listening, and speaking. Language proficiency in English is usually defined by a combination of these four skills (Sadiku, 2015). Future studies may be conducted on a larger scale using standardized English tests to validate the results of the investigation. Also, a qualitative component was missing, which could have explored students' views on the influence of the English language on their academic and licensure success. Nonetheless, this study has addressed the paucity of research on the influence of proficiency in the English language has on licensure examination within the local context. Additionally, this study has provided support on prior studies affirming the impact of English language proficiency on students' academic performance where English is the medium of instruction in a non-native English speaking country.

CONCLUSION

English language proficiency significantly influences students' performance in professional nursing courses and the NLE. Enhancing students' English language proficiency is considered beneficial in promoting students' academic and licensure examination success in a country where the language used by the teacher or instructor to teach the language is English. The result of this study can be utilized in developing strategies to enhance students' English language proficiency to support students' academic and licensure examination success. Nursing schools must ensure that approaches in improving students' English language proficiency must be well integrated into the undergraduate nursing program.

CONFLICT OF INTEREST

None.

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Determinants of Stunting in Children Aged 12-59 Months

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ABSTRACT

Background: Stunting is one of the priorities of nutritional issues in Indonesia. It is one of the chronic malnutrition effects in children, which will have a long-term impact on the growth and cross-generation of mothers through the cycle of stunting syndrome.
Purpose: This study aimed to identify the determinant factors of stunting in children aged 12-59 months.
Methods: Quantitative research with a cross-sectional approach was employed in this study, involving 205 respondents recruited using a consecutive sampling technique. Data were collected using the z scores and questionnaires for children aged 12-59 months, food trust questionnaire, feeding practice questionnaire, and child eating habits questionnaire. The Chi-Square test and multivariable logistic regression were performed for the data analysis.
Results: Children who were not exclusively breastfed and had major infectious disease had a higher risk of stunting for 53.8% and 40.9%, respectively. There was a significant relationship between the history of exclusive breastfeeding (p=0.001, OR=2.28), the history of infection (p=0.013, OR= 2.27), and eating habits (p=0.04, OR=1.55) with stunting in children.
Conclusion: There is a relationship between the history of exclusive breastfeeding, the history of infection, and the eating habits of children with stunting. The formation of a peer group community of children aged 12-59 months is expected to prevent and overcome stunting and improve nutritional status and optimal development of the children.

Keywords: Children aged 12-59 months, stunting, breastfeeding, infection, eating habit

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BACKGROUND

Nutritional status has a significant influence on a child's growth and development. The efforts to meet the good nutritional status are given to a mother since the pregnant period until the phase after the baby is born (United Nations Children's Fund [UNICEF], 2017). Complete and varied nutrition during the first 1000 days of life can help brain development, promote proportional growth, and reduce the risk of disease (Saavedra & Dattilo, 2016). The inability to fulfill nutrition for the children during this

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period can cause growth failure or growth retardation (Williams & Suchdev, 2017). One of the growth disturbances is stunting, which can affect the development of cognitive and non-cognitive abilities that will be felt in the pre-school to adolescence (Himaz, 2018).

The prevalence of stunting in the world has decreased from 32.6% in 2000 to 22.2% in 2017. Likewise, the prevalence of stunting in Southeast Asia has decreased from 51.3% in 2000 to 35.8% in 2016 (UNICEF, WHO, World Bank Group, 2017). Indonesia is included in the third country with the highest prevalence in the Southeast Asian or South-East Asia Regional (SEAR) region. The prevalence of stunting children aged 12-59 months in Indonesia in 2013 was 37.2%, and in 2018 was 30.8% (Ministry of Health Republic of Indonesia [MoHRI], 2018). The prevalence of short children aged 12-59 months in Bangka Belitung Islands Province in 2016 was 21.9%, which increased by 27.3% in 2017. Similarly, in Pangkalpinang, a city in Bangka Belitung, the prevalence of short children aged 12-59 months in 2016 was 21.7% and increased to 26.7% in 2017 (Public Health Office of Bangka Belitung Islands Province, 2017).

Referring to the high number of stunting and the impact it takes, a comprehensive effort is needed. One of the efforts that have been successfully carried out is to control the factors that cause stunting (Zanello, Srinivasan, & Shankar, 2016). Kismul, Acharya, Mapatano, & Hatløy (2017) grouped three factors related to stunting: distal factors, intermediate factors, and proximal factors. Distal factors cover mothers' education, ethnicity, economic status, location, and type of settlement. Intermediate factors include environmental factors and maternal factors. Proximal factors include the birth order of children, the child's health status, and early breastfeeding initiation. Moreover, eating habits can also affect stunting, one of which is due to the way parents give their children food that is not yet diverse and balanced (Ban, Guo, Scherpbier, Wang, Zhou, & Tata, 2017).

The cultures are also influencing factors of stunting. Such cultures may include belief against food, practices of child feeding according to mother's tradition, and children's eating habits. The culture that exists in society is also one of the factors that influence how parents feed their children (Batiro, Demissie, Halala, & Anjulo, 2017). There is a culture of prelacteal feeding of newborns and complementary feeding for children aged 12-59 months (Illahi & Muniroh, 2016). The culture that influences the feeding also indirectly influences the nutritional adequacy of children, which affects the emergence of stunting (Pokhrel, Nanishi, Poudel, Pokhrel, Tiwari, & Jimba, 2016).

Cultural and tradition factors have not been the focus of research in Indonesia, even though they are one of the main factors of stunting. Due to the diverse factors which cause stunting, the high incidence, and the impact of stunting, the researchers are interested in finding out the determinants of stunting in children aged 12-59 months.

PURPOSE

This study aimed to identify the determinant factors of stunting in children aged 12-56 months.

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METHODS

Design and samples

This study used a cross-sectional research design and was conducted in Pangkalpinang, Bangka Belitung. The samples were 205 respondents of children aged 12-59 months selected from seven districts. Proportional sampling, which refers to the sampling process based on the area or unit by taking into account the proportion of the population, was used to recruit the samples. The number of samples in each district based on the calculation of proportion is listed as follows: Rangkui = 37, Bukit Intan = 40, Grimaya = 19, Pangkalbalam = 22, Taman Sari = 21, and Gerunggang = 38, and Selindung = 28. After the number of samples in each district was determined, the sampling in this study was carried out using a non-probability sampling method of consecutive sampling. The inclusion criteria were: children aged 12-59 months, mothers and children aged 12-59 months were residents living in Pangkalpinang, the mothers were able to read and write, and willing to be respondents after receiving the research explanation. The exclusion criteria were parents who were sick and unable to continue filling out the questionnaire, and the level of children's intelligence was <105.

Ethical consideration

This study was approved by the health research ethics committee of Yogyakarta Aisyiyah University as an effort to protect the welfare of the respondents in the form of an ethical statement No. 393/KEP-UNISA/XII/2018.

Measurement

Data collection tools in this study were a height meter to measure a child's height and height chart according to the age by WHO 2006 to determine stunting in children aged 12-59 months by looking at the z score and questionnaire. Four questionnaires were used in the study. The questionnaires were derived from Birch, Fisher, Grimm-Thomas, Markey, Sawyer, & Johnson (2001), and tested for validity and reliability. The first questionnaire is the child characteristic questionnaire, which consisted of gender, age, history of exclusive breastfeeding, history of early breastfeeding initiation, history of immunization, and history of infectious diseases. The second questionnaire is the Belief or Tradition Questionnaire towards Food that is measured using a 1-10 Likert scale (1 = do not agree, and 10 = strongly agree), and the validity was 0.425-0.933. The third questionnaire is the Child Feeding Questionnaire to find out how parents feel in feeding their children in terms of responsibilities and monitoring measured by using a Likert scale of 1-5 (1 = never, 2 = rarely, 3 = several times, 4 = mostly, 5 = always) and the validity is 0.58-0.841. The fourth questionnaire is the Child Eating Habit Questionnaire to find out children's eating habits measured by using a Likert scale of 1-5 (1 = never, 2 = rarely, 3 = several times, 4 = mostly, 5 = always) and the validity is 0.439-0.929. The second, third, and fourth questionnaires have obtained the r results (corrected item-total correlation) more than the r table (0.361), so it can be concluded that the statements in the questionnaire are valid.

The results of the reliability test showed that the Cronbach's alpha values of the second, third, and fourth questionnaires were 0.962, 0.938, and 0.976, respectively. Therefore, it could be concluded that the instruments were reliable since the value was more or equal to 0.8.

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Data analysis
The data analysis in this study was performed using univariate and bivariate analyses. The univariate analysis described the characteristics of children and the culture of feeding children, which were expressed in frequency and percentage distribution since the data were categorical. The bivariate analysis described the relationship between the characteristics of children, feeding culture, and the incidence of stunting. The statistical test utilized the chi-square and multivariable logistic regression for the analysis process.

RESULTS

Demographic characteristics of respondents
The majority of children aged 12-59 months were males (51.2%). The children with a history of exclusive breastfeeding and a history of early breastfeeding initiation were 68.3% and 73.2%, respectively. Furthermore, those children with a history of complete immunization and a history of infection were 77.6%, and 56.1%, respectively (Table 1).

Table 1. The Characteristic of respondents

Characteristics of Respondents	*f*	%
Sex		
Male	105	51.2
Female	100	48.8
Exclusive breastfeeding history		
Exclusive breastfeeding	140	68.3
Non-exclusive breastfeeding	65	31.7
History of early breastfeeding initiation		
Early breastfeeding initiation	150	73.2
Non-early breastfeeding initiation	55	26.8
Immunization history		
Complete	159	77.6
Incomplete	46	22.4
Infection history		
Had an infection	115	56.1
Never had an infection	90	43.9

Relationship between gender, breastfeeding, immunization and infectious disease with stunting
The results indicated that there was no significant relationship between gender, history of early breastfeeding initiation, and history of immunization with stunting (*p*-value 0.62; 0.93; 0.66) (Table 2). However, the proportion of children aged 12-59 months who were not exclusively breastfed had a higher stinting risk of 53.8%. Based on the results of the analysis, it is reported that there was a significant relationship between exclusive breastfeeding and stunting with a p-value of 0.001 ($p<0.005$). In addition, the OR (Odds Ratio) value is 2.28 (95% CI: 1.57-3.32), which shows that children aged 12-59 months who were not given exclusively breastfed have 2.28 times stunting chance compared to exclusive breastfeeding.

The proportion of the children aged 12-59 months with the majority of infectious disease had a higher stunting risk of 40.9%. The analysis found that there was a

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significant relationship between infectious disease status and the incidence of stunting in Pangkalpinang with *p*-value = 0.013 (*p*<0.05). It is also obtained an OR (Odds Ratio) value of 2.27 (95% CI:1.22-4.19), which shows that children aged 12-59 months suffering from infectious diseases have 2.27 times chance of stunting compared to those who did not (Table 2).

Table 2. Relationship between gender, history of exclusive breastfeeding, history of early breastfeeding initiation, history of basic immunization, history of infectious diseases, and stunting

Variable	Stunting classification				*P* value	OR (CI 95%)
	Stunting		Non-stunting			
	n	%	n	%		
Gender						
Male (ref)	37	35.2	68	64.8	0.620	0.83
Female	31	31	69	69		(0.46-1.48)
Exclusive breastfeeding history						
Exclusive breastfeeding (ref)	33	23.6	107	76.4	0.001*	2.28
Non-exclusive breastfeeding	35	53.8	30	46.2		(1.57-3.32)
History of early breastfeeding initiation						
Early breastfeeding initiation (ref)	49	32.7	101	67.3	0.930	0.92
Non-early breastfeeding initiation	19	34.5	36	65.5		(0.48-1.76)
History of basic immunizations						
Complete, age-appropriate (ref)	51	32.1	108	67.9	0.660	0.82
Incomplete	17	37	29	63		(0.41-1.59)
History of infectious diseases						
Positive	47	40.9	68	59.1	0.013*	2.27
Negative (ref)	21	23.3	69	78.7		(1.22-4.19)

* *p*-value <0.05

Relationship between mothers' belief, feeding practice, and eating habits, and stunting

The results of this study indicated that there was no relationship between mothers' belief in food and the feeding practice with the incidence of stunting. Children with low eating habits tended to experience more stunting, which was 39.6%. The results of the analysis found that there was a significant relationship between children's eating habits and stunting with *p*-value = 0.04 (*p*<0.05). In addition, an OR (Odds Ratio) value was 1.55 (95% CI:1.03-2.35), which showed that the children aged 12-59 months with low eating habits hadve 1.55 times chance of stunting compared to those with high eating habits (Table 3).

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Table 3. Relationship between mothers' belief against food, practices of child feeding according to mothers' tradition, the practice of child feeding, children's eating habits with stunting

Variable	Stunting Classification				*p* value	OR (CI 95%)
	Stunting		Non Stunting			
	n	%	*n*	%		
Mother's Belief in Feeding						
Low confidence	40	38.8	63	61.2	0.1	0.59
High confidence (ref)	28	27.5	74	72.5		(0.33-1.07)
The Practice of Child Feeding						
Low control	35	32.4	73	67.6	0.92	1.07
High control (ref)	33	34	64	64		(0.6-1.9)
Children's Eating Habits						
Low	44	39.6	67	60.4	0.04*	1.55
High (ref)	24	25.5	70	74.5		(1.03-2.35)

* *p*-value <0.05

DISCUSSION

The characteristics of the children in this study included gender, age of the child, history of exclusive breastfeeding, history of early breastfeeding initiation, history of basic immunization, and history of infectious diseases. There is no relationship between the gender of the children aged 12-59 months in this study and stunting. Both males and females have a similar possibility to experience stunting. Other things that have a similar possibility are the history of early breastfeeding initiation and the history of basic immunizations. On the other hand, the history of non-exclusive breastfeeding and the history of infectious diseases experienced by children aged 12-59 months have a chance to cause stunting.

A study by Setiawan, Machmud, and Masrul (2019) showed that there were significant relationships between energy intake level, history of infectious disease duration with the incidence of stunting. Non-exclusive breastfeeding has an influence on the incidence of stunting in children aged 12-59 months. It is in line with the results of the previous study, which points out that exclusive breastfeeding is strongly associated with reducing the risk of stunting (Victora et al., 2008). The result of another research indicates the same result; one of the main factors causing stunting in the village of Petobo, Palu is that the mothers do not give exclusive breastfeeding (Rahman, Napirah, Nadila, & Bohari, 2017). This finding is also supported by the results of another research which states that exclusive breastfeeding during the first six months and appropriate complementary foods are the efforts to reduce short growth rates and improve the children's survival. The survey result from eight countries in Africa and Asia revealed that two countries (Ethiopia and Kenya) showed significant results in the relationship between stunting and exclusive breastfeeding (Bove, Miranda, Campoy, Uauy, & Napol, 2012). Breast milk contains nutrients and bioactive factors that can prevent infection and inflammation and support the body's immunity and organ maturity (Ballard & Morrow, 2013). It confirms that exclusive breastfeeding is very important in supporting optimal child growth. The benefits may be due to the nutritional content of

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breastfeeding, like long-chain fatty acids such as docosahexaenoic acid (DHA) and arachidonic acid (AA) and their influence on brain development. Breastfeeding might exert an effect through the physical and emotional contact between mother and infant during breastfeeding (Pang et al., 2019).

Based on the results of this study, infectious disease is one of the contributors to the occurrence of stunting. Infectious diseases can be caused by several things, such as the environment and poor sanitation. More than one-fifth of the world's population lives in inadequate environments and lack of clean water which allow high rates of enteric infections like diarrhea. The enteric infection will disrupt the function of absorption of nutrients in the intestine, causing up to 43% of growth to be stunted, which affects one-fifth of children worldwide and one-third of children in developing countries (Guerrant, DeBoer, Moore, Scharf, & Lima, 2013). When during the first two years, a child has an infectious disease, he/she can experience an average growth reduction of 8 cm and IQ decrease of 10 points when they are 7-9 years old. It shows that infectious diseases in children can result in stunted growth (Guerrant et al., 2013).

Culture in child feeding covers the mothers' belief in feeding, child feeding practices, and child's eating habits. The mothers'' belief in feeding will affect child feeding practices. It is related to the habits that the mother believes regarding the prohibition or abstinence of nutritious food in her family. Most mothers have beliefs in particular food and the application of feeding practices is done according to low maternal confidence (Ma, 2015). It means that few people believe in culture and rarely apply the belief according to it. Koini, Ochola, and Ogada (2019) stated that socio-cultural practices and beliefs had been shown to influence the feeding of children, thus determining their nutritional status. Socio-cultural beliefs and practices which are basically contrary to the principle of fulfilling nutrition are the existence of dietary restrictions on pregnant women and children, mistakes in providing complimentary food to children, as well as the existence of negative views that prohibit immunization and exclusive breastfeeding.

The variable of child feeding illustrates how parents provide supervision, pressure, and restrictions on feeding their children. Ek et al., (2016) elaborate that the variable of child feeding is the way parents control and regulate the child's feeding. The variable also aims to see the beliefs, attitudes, and application of feeding by parents to children (Birch et al., 2001). Feeding a child is one of the factors that will affect a child's nutrition. This is partly because the child's food intake at pre-school age depends on the feeding. It is in line with the research of Birch et al., (2001) that parents who have babies and preschool children play an important role in deciding food for their children, responding to children's desire to eat, and deciding on adequate food limits for their children. In this study, child feeding is largely low, which shows that the efforts to control and regulate food intake for children are also low. Birch et al., (2001) explained that if the feeding given by parents is low, the food intake received by children is also low. Therefore, it can be concluded that low feeding contributes to the adequacy of nutrition received by children.

The variable of children's eating habits consists of two domains: the rejection of food and acceptance of food. In this study, most of the eating habits in children are low.

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Children eating habits can affect food intake, which can affect the nutrition of children, one of which is stunting (Biondi, 2007). Birch et al. (2001) affirm that children have begun the ability to choose which foods they like or dislike. It confirms that the children's desire to choose allows them to form the eating habits which are possibly not appropriate with the efforts to fulfill optimal nutrition. On the other hand, parents must have a good ability to control food consumption. It is in line with research conducted by Birch et al. (2001), which explains that feeding the children has a close relationship with eating habits. Another research finding states that the initiation of inappropriate complementary feeding is directly related to stunting (Abeway, Gebremichael, Murugan, Assefa, & Adinew, 2018). The variables explained in some of the results of these studies are the factors that have a relationship in assessing the nutritional status of children related to their physical growth.

One of the factors that can influence stunting is eating habits, one of which is due to the way parents give their children food that is not yet diverse and balanced (Ban, Guo, Scherpbier, Wang, Zhou, & Tata, 2017). The culture that exists in the community is one of the factors that influence how parents feed their children (Batiro et al., 2017). The existence of a culture that is contrary to the principle of fulfilling nutrition in children is one of the predisposing factors for the occurrence of stunting (Nurbaiti, Adi, Devi, & Harthana, 2014).

CONCLUSION

This study showed that there was a significant relationship between the history of exclusive breastfeeding, the history of infection, eating habits, and stunting in children aged 12-59 months. The findings are expected to help the formation of peer groups in the children aged 12-59 months' family community to prevent and overcome stunting and to improve nutritional status and optimal children aged 12-59 months' development.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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The Lived Experiences of the Lombok Earthquake Survivors

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ABSTRACT

Background: The large-scale earthquake which had struck off Lombok, an island in West Nusa Tenggara, made the survivors faced poor conditions, difficulties, and lack of supplies. Besides physical losses, the survivors also experienced various psychological health disorders that significantly affected their psychological condition as well as life.
Purpose: This study was aimed at exploring and gaining deeper meaning from the lived experiences of the Lombok earthquake survivors.
Methods: This study used a qualitative method with a descriptive phenomenological approach to elucidate the phenomena from experiences. The participants were ten (10) survivors of the Lombok earthquake, who were determined by purposive sampling. Data were collected through in-depth interviews and analyzed using Colaizzi's method.
Results: The results showed six emerging themes, including (1) problems solving skills when disaster strikes, (2) surviving from the limitations and difficulties, (3) feeling accustomed to earthquake, (4) family is a key source of strength to continue life, (5) getting closer to God by doing religious prayers and actions to have peace of mind, and (6) learning from the disasters to become a better human being.
Conclusion: The lived experience of the Lombok earthquake survivors was a long journey where they survived and adapted the difficult situations, as later, they could turn the under-pressure conditions to chances for their personal development. Findings of this study provide insights for nurses to greatly contribute to solving post-disaster psychological issues by strengthening the survivors' religious aspects, trauma healing, play therapy, and peer-support group.

Keywords: Lived experience, Lombok earthquake, natural disaster, survivors

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BACKGROUND

The context of this study is based on interviews with Mr. Z as one of the earthquake survivors in Lombok, an island in West Nusa Tenggara, Indonesia. Mr. Z stated that besides causing physical damage and injuries, the earthquake disaster also caused survivors to experience psychological problems. Marthoenis, Yessi, Aichberger, and

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Schouler-Ocak (2016) stated that most survivors will experience serious psychological impacts and can last in the long term so that it affects their behavior in living their daily lives. Psychological disorders occurred among survivors include acute stress, post-traumatic stress, and depression related to trauma. According to Shenk, Mahon, Kalaw, Ramos, and Tufan (2010), trauma is the main psychological impact of a disaster.

Trauma is an emotional response to terrible events such as natural disasters. This happens immediately after the incident. If the trauma is not handled properly, it will result in acute stress disorder (ASD) and post-traumatic stress disorder (PTSD). Birmes et al. (2009) revealed that ASD occurred three days to one month after experiencing trauma, whereas PTSD occurred after one month experiencing the event of trauma. In the context of life experience to face and overcome difficult conditions after a disaster, a person who experiences it is named a survivor, not a victim. He/she struggles to survive and overcome problems despite the limitations and difficulties caused by the disaster (Suryani, Welch, & Cox, 2013).

Several studies on natural disaster survivors have been conducted either in Indonesia or other countries. However, the earthquake disaster that occurred in Lombok has different characteristics from previous studies. This characteristic is a long period of disaster. A report from BMKG (Meteorological, Climatological, and Geophysical Agency) stated that in August 2018, there were five significant earthquakes in Lombok with earthquake strength above 6.3 to 7.0 SR. Over the next 20 days, 2.566 aftershocks have occurred (Meteorological, Climatological, and Geophysical Agency, 2019). Based on data collection through preliminary interviews, a year after the Lombok earthquake, participants and surrounding communities still felt several aftershocks. Supported by data from BMKG on July 18, 2019, that the earthquake again struck Lombok with a magnitude of 4.1 SR. On July 24, 2019, there was still an earthquake with a magnitude of 4.3 SR (Meteorological, Climatological, and Geophysical Agency, 2019). The earthquake results in differences in the psychological response of earthquake survivors in Lombok and other regions.

In Indonesia, several studies have been conducted on natural disaster survivors, including research on tsunami survivors in Aceh in 2004 and the earthquake in Yogyakarta in 2006. According to Sunarti (2007), in the case of the tsunami in Aceh and earthquake in Yogyakarta, mental disorders are one of the main post-disaster health problems besides physical health problems such as the tetanus outbreak. Different results were found in Lombok. Based on reports obtained from the medical records of a mental hospital in West Nusa Tenggara during a preliminary study, it was shown that the number of mental disorders in 2017 amounts to 20,554 people. At the end of 2018, the number of mental disorders was 20,711. This means that after the earthquake in Lombok, there was no significant increase in the number of mental patients.

Results of observations also show another phenomenon that not all survivors in Lombok experience severe psychological disorders after the disaster. Even some of them became volunteers who participated in helping other victims of disaster, such as rescuing victims trapped in the rubble of buildings, initiators of the relocation of refugee villages, and carrying out trauma healing for refugees. This condition can occur because the life

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experiences that disaster survivors have are different, subjective, and individual so that they produce different psychological responses to each individual in dealing with traumatic experiences. Subjective experiences mean how survivors live their daily lives in the limitations and pressures of life, the efforts made to survive, the symptoms they feel, their hopes, and the quality of life of survivors (Suryani, 2013; Bowers, Kreutzer, Cannon-Bowers, & Lamb, 2017).

Research on natural disaster survivors is important because a person's survival process can be known through his life experience. The journey of survivors in the process of dealing with traumatic experiences can make an effective contribution to preventing and overcoming psychological problems compared to medical treatment (Allott, Liu, Proffitt, & Killackey, 2011). Therefore, it is necessary to conduct in-depth research and explore the experiences of earthquake survivors in Lombok.

PURPOSE

This study was aimed at exploring and gaining deeper meaning from the lived experience of the Lombok earthquake survivors.

METHODS

Design and participants

This research is related to the experiences, perceptions, and feelings of individuals who became survivors of the earthquake disaster in Lombok. Therefore, researchers used a qualitative method with a descriptive phenomenological approach to describe and explain the phenomena from experiences (Creswell, & Poth, 2012). There are two reasons why phenomenology is suitable for this research. First, this research deals with the lives of people who have encountered specific experiences such as becoming natural disaster survivors, and second, this phenomenon is firstly observed in Lombok. In phenomenology studies, a deeper understanding of philosophical assumptions is important to identify these assumptions (Suryani, Welch, & Cox, 2016). This research explores the experiences of survivors who encountered the earthquake disaster in Lombok.

The participants in this study were ten survivors who directly experience the earthquake disaster in Lombok. The determination for the number of participants is based on the achievement of the level of data saturation.

Research instrument and data collection

In qualitative research, the researcher acts as a key instrument. The researcher conducts the collection, documentation, and interviewing the participants to obtain all the data that is desired by the researcher (Creswell, & Creswell, 2017). The data in this study were collected using in-depth interview techniques in the form of open-ended questions from participants who met the inclusion criteria. The interview lasted for about 40 to 65 minutes. In the interview process, each participant provided different information despite having the same experiences. Therefore, the researchers investigated and learned the background of specific participants, and then asked questions naturally and spontaneously, using the language that was mostly understood by participants. The researchers gave participants the broadest opportunity to answer the questions raised.

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The researchers also tried to encourage participants to share their experiences honestly. In the final stage, the researcher evaluated the results of the interview then validated the data that required confirmation from the participants.

Data analysis

The data analysis used in this study was the Colaizzi method by validating the results of the final data to the participants. It means that what is written by the researcher is following the participant's intentions (Polit & Beck, 2010). According to Suryani et al. (2016), the Colaizzi method is suitable for analyzing phenomena. The steps of data analysis are: (1) obtaining the essence of each interview transcript, (2) extracting important statements, (3) formulating the meaning of a significant statement regarding the research objectives, (4) organizing the meaning formulated into a collection of themes, (5) writing a complete description of the research phenomenon, (6) describing the basic structure of the research phenomenon, and (7) validating the results of existing transcripts to all participants. During the data analysis process, an important thing that the researchers did was bracketing. It means that the researchers focused on the statements that the participants expressed and tried to put aside understanding and prejudice about the phenomenon under study.

Ethical consideration

Participants who were willing to become research respondents were asked to fill out an informed consent sheet. The researchers respected the privacy and confidentiality of participant data, explored participant experiences in accordance with research ethics, and used language that could be understood by each participant. This research was reviewed and approved by the Health Research Ethics Committee of the Faculty of Medicine, Padjadjaran University, number 712/UN6.KEP/EC/2019.

RESULTS

The results of this study showed that the age of participants ranged from 19 to 92 years old. Six were males, and the other four were females. Participants had diverse religious, educational, and occupational backgrounds. All participants were survivors who had been refugees; seven of whom were volunteers who participated in helping other disaster victims.

The results of interviews with the participants found six essential themes, consisting of the ability to overcome problems in disaster situations, surviving in limitations and difficulties, feeling accustomed to earthquakes, the presence of a family as a strong source to continue life, getting closer to God by performing worship rituals, and taking wisdom from disaster to become a better human being. The themes are described separately to express the meaning of the participant's life experience. However, there are interrelations between each theme.

Ability to overcome problems in a disaster situation

In the first theme, participants revealed various efforts made to overcome every problem experienced during the earthquake disaster. The incident was expressed as a gripping experience causing stress, panic, and fear. In this condition, six out of 10 participants

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expressed they were trying to overcome feelings of stress, panic, and fear by being calm. The following was the expression of participant 4:

> "... Sad, we are so sad, we are lost, the mind wanders ... In that state, we try to calm down, but it is very difficult. After feeling calm, finally, the tense atmosphere diminished" (P4).

In addition to overcoming panic by being calm, there was a phenomenon in which laughter and joking become one of how participants dealt with psychological problems caused by disasters. Furthermore, for participant 7, joking and laughing was not only a way to overcome problems but rather a way to enjoy life during difficult conditions:

> "... We made many jokes when we gathered, that what makes us happy, the mind is not only focused on the earthquake. Emotions, anxiety, and fatigue reduced. That is how we enjoy life when it is tough" (P7).

Different from other participants, participant 3 overcame panic, fear, and depression by trying to think positively:

> "... Because when the situation is panic, nothing is easy, just open the door, it's hard to ask for forgiveness, even though we just have to check it, we try to control ourselves by thinking we will be safe, so we feel calmer" (P3).

Survival in limitations and difficulties

In this study, all participants expressed feeling that they were living in limitations and difficulties during the disaster. So, they made various efforts to survive. The following was the expression of participant 4:

> "... We use whatever we found, especially at that time, the water was very difficult. Before help comes, we drink turbid water, and we surely survive" (P4).

During the conditions of limitations and difficulties, the majority of participants revealed that they found strength in togetherness. They together strengthened each other so they could survive. The following was an expression from participant 4:

> "... Equally advising each other, the bond of brotherhood in the refugee camp was tight. If someone seems to have problems, all immediately gathered. We are like returning to our childhood that togetherness is back again" (P4).

Furthermore, participants realized that they could not deal with disaster alone, as illustrated in the following expression of participant 1:

> "... We cannot escape from our neighbors and family, because this disaster cannot be faced alone. Some families and neighbors help, where to ask for help and assistance" (P1).

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Apart from having to survive the limitations and difficulties caused by the disaster, most participants felt threatened by thieves and looters shortly after the earthquake shook. To preserve property, participants conducted social cooperation in the form of mobile patrols and security posts. The following was the expression of participant 6:

> "... When the dusk has begun to tense, like when fighting against the Dutch, at 5 p.m., the teenagers return to their respective posts to patrol, we must ensure that the tents of families and residents are safe, the atmosphere is like the 80s" (P6).

Feeling accustomed to earthquakes

Most of the participants in this study revealed that they felt accustomed to the earthquake. The change in reaction to the earthquake was expressed by participant 4, as follows:

> "... We cannot count it, ... because there must be an earthquake every 10-20 minutes, until now. However, the earthquake is big, but we tried to get used to it. At first, our feet felt shaking, but now we are getting used to it" (P4).

Based on the experiences expressed by the participants, earthquakes were previously perceived as tense cases, but afterward, they were considered as normal cases to produce a better psychological response. Participant 5 stated the following:

> "... After that, aftershocks still came. I gradually got used to it. After the big earthquake, small quakes came. So I just stayed in the room not in a hurry, tired of running, even running could make us fall and get hurt" (P5).

The presence of a family as a strong source to continue life

On this theme, all participants revealed that the presence of the family was a source of strength to continue living. Specifically, the presence of the family was very beneficial for participants in living a life full of stresses and difficulties, both during and after disasters disaster. The following was the expression from participant 2:

> "... Family is everything. The first that motivates us is the family, not others. So, don't leave your family." (P2).

Six out of 10 participants in this study lost their homes due to the earthquake disaster. For the six participants, the family was more meaningful than the house and property they owned, as expressed by participant 3:

> "... For me family is everything, a family is more valuable than property" (P3).

Furthermore, the family was the main reason for most participants to survive and move on, as illustrated in the expression of participant 6:

> "... The thing that makes me conquer it all is family, why? ...because if I were alone, I would not be able to control myself. I would be frustrated. If I were frustrated, then who would strengthen them?" (P6).

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Getting closer to God by performing worship rituals
A total of four participants expressed gaining peace through worship rituals such as prayer, prayer, recitation, remembrance, and charity. There were also spiritual aspects that make participants feel calm in the form of resignation (submission to God), sincerity, and belief in destiny (faith), as illustrated by participant 2:

> "...Not as agitated as before, like when it first happened, now we feel calmer in anticipating things. Reciting, praying, doing dhikr, and then asking for forgiveness from God, sharing fortune if there is, giving alms." (P2).

Meanwhile, for participants 3, belief in destiny made him feel calmer in interpreting the occurrence of disasters. According to him, the natural disasters that occurred was provisions set by God. Participant 3 stated the following:

> "Fostering a sense of calmness in the heart, that's for sure, surely feeling calmer if you believe in God's destiny" (P3).

After experiencing the earthquake disaster, almost all participants revealed that they were trying to increase worship to prepare for life in the afterlife, as expressed by participant 9:

> "... Life is only temporary, bad or good house is only temporary. I want a good home in the afterlife by doing worship" (P9).

Taking wisdom from disaster to become a better human being
Almost all participants in this study consider that the earthquake was a warning from God that humans need to try to be better than before, as expressed by participant 2:

> "... I consider this disaster as a warning to be more trustworthy and devoted to Allah" (P2).

Although believing in the disaster was a warning and reprimand due to any unpleased action, it did not make the participants feel punished or hated by God. On the contrary, for most participants, the condition of surviving a disaster was considered an opportunity to improve. The following was the expression of participant 7:

> "... Yes, we are self-conscious; we must not judge people in this area as a sinner. If we feel ourselves are not good enough, then try to improve ourselves" (P7).

A slightly different statement was expressed by participant 9. According to him, after the disaster, everyone became equal; there were no rich and poor people, no luxurious homes, and ugly houses. Everything became equal. According to participant 9, there were things they could learn from the disaster.

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"... House. Before the disaster, some houses were ugly; others were large and luxurious. After the disaster, all the houses were flat. There were no longer the rich and the poor, all the same; the houses were equally flat." (P9).

DISCUSSION

In this study, each participant provided different information despite having the same experience. This condition can occur because the life experiences that disaster survivors have are subjective and individual so that they can produce different psychological responses to each individual in dealing with traumatic experiences (Suryani, 2013).

Ability to overcome problems in a disaster situation

The ability of survivors to overcome problems is influenced by various factors, including interpersonal relationships, internal and external resources that they have. According to Ponizovsky, Finkelstein, Poliakova, Mostovoy, Goldberger, and Rosca (2013), these factors affect the ability of individuals to deal with a problem. Most survivors in this study tried to overcome the panic experienced by being calm. According to participants, a calm attitude in stressful conditions when experiencing a disaster was very effective in reducing feelings of fear, depression, and panic so that it could save them from life-threatening conditions. It is in line with a study by Suryani (2013), which stated that the experience of survivors in facing and overcoming challenges every day is subjective. It means that individuals use all their strengths in their limitations as sources of strength. Survivors can find their way of overcoming problems.

Besides, some participants also made efforts to joke and laugh as a part of their sense of humor. According to Eysenck (2012), individuals with a good sense of humor can look at problems from a more positive perspective. It contributes to reducing anxiety and feelings of helplessness. However, in this study, a sense of humor is not only a way to overcome problems, but also a way to enjoy life during difficult conditions.

Another effort made by participants in overcoming their problems is by trying to think positively in stressful situations. Positive thinking is closely related to emotions. Survivors with positive thoughts are more likely to reduce stress (Phanichrat & Townshend, 2010). The statement reinforces the findings of Mondal et al. (2013) that the survivor's ability to think positively will have an impact on the accuracy of making decisions, the ability to control emotions, and being calm.

Survive in limitations and difficulties

Individuals who experience psychological problems after a disaster have a chance to survive and overcome the problem. It is related to resilience that describes the ability of survivors to overcome and adapt to an adverse event in life. It describes the effort made by survivors to survive in a state of stress and deal with the traumatic experience they have (Suryani, 2013).

Based on the results of the study, participants gained the strength to survive in togetherness. This is following the results of a study by Oflaz, Hatipoğlu, and Aydin (2008), which revealed that post-disaster psychological problems could be overcome by

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improving social and interpersonal relationships, especially among fellow disaster victims. This study is also in line with Richardson, Cobham, McDermott, and Murray (2013), reporting that feeling the same fate as having experienced the same incident can strengthen self-confidence and alleviate feelings of distress. Besides, participants also revealed their efforts to survive the threat of thieves and looters shortly after the earthquake. This is a new phenomenon in Lombok and maybe in Indonesia because it is due to natural disasters. There are no previous research results related to natural disaster survivors regarding this theme. According to Goto, Wilson, Kahana, and Slane (2006), cases such as theft and looting caused by the condition of people who have difficulty getting food and drinks so that they decide to steal.

In this study, participants made efforts to survive through social cooperation such as patrolling, cooperation, and mutual care. This condition shows a positive social relationship with fellow disaster victims. Based on the results of a study by Yamamoto (2011) on earthquake survivors in Japan, it was reported that individuals with positive social relationships and social support from their communities tended to be more capable to effectively overcome the difficulties and pressures of life.

Feeling accustomed to earthquakes

Based on the results of the study, there was a phenomenon where most participants were able to overcome feelings of anxiety, panic, fear, and stress after feeling accustomed to the earthquake. This phenomenon caused by the earthquake that occurred in Lombok lasted continuously for a long time. Based on a review of various literature on natural disaster survivors in Indonesia and abroad, no research discusses the theme of feeling accustomed to earthquakes or other natural disasters.

The results of the study of Ma et al. (2011) for survivors in China found that post-disaster psychological problems such as trauma is still felt by survivors after three years of the earthquake disaster. Similarly, research by Shenk et al. (2010) in Peru showed that three years after the disaster, most of the survivors still survived in the refugee camp because they felt traumatized. From the results of the study, participants felt accustomed after 11 days to 2 months after the disaster. It was further revealed that the feeling of being accustomed to an earthquake is not an ability acquired through effort, but arouse due to difficult conditions that forced them to adjust.

Difficult conditions that occur in a long period can encourage individuals to try to find ways to reduce stress (Ponizovsky et al., 2013). Referring to the results of Yamamoto's study (2011), survivors have adapted to difficult situations characterized by reduced psychosocial impacts in the aftermath of a disaster. In line with this statement, Christia (2012), in her research, explained that survivors who have repeated similar experiences would know better how to act to get out of stressful conditions after a disaster.

The emergence of the theme of feeling accustomed to earthquakes is a new insight in this study as it is not reported in previous studies regarding the life experience of natural disaster survivors. This could be due to the experience of survivors in dealing and interpreting disasters as subjective to produce different psychological responses in each survivor (Suryani, 2013).

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The presence of a family as a strong source to continue life

Life after a disaster is a state of stress and difficulty for survivors. This condition made participants need tangible support from various sources to survive the difficulties caused by the disaster. All participants in this study revealed the amount of support and meaning of family presence. Participants became more eager to move on. This finding is supported by the research of Musa et al. (2014) related to the experience of tsunami survivors in Aceh that the presence of families is a source of strength and motivation needed in living life during and after a disaster.

Various literature studies are carried out to find out why certain survivors have stronger resilience than other individuals when facing difficulties. Studies by Warsini, Mills, West, and Usher (2016), and Levine, Laufer, Stein, Hamama-Raz, and Solomon (2009) have identified factors that strengthen survivor resilience, namely the existence of the family as a source of strength in facing and overcoming difficulties. The findings in this study are consistent with the results of previous studies. Participants revealed that the family is a source of strength to survive and move on.

Based on a study by Sharp (2010), survivors may not be able to overcome their problems and need the role of other people around them, especially their families. The importance of family presence is expressed by Shenk et al. (2010) in his study that survivors displaced by disasters tended to feel worthless because they did not have anything. The support of the family in the form of love and affection is very helpful in increasing their confidence. It means that family is the most valuable and meaningful for participants. Family presence is a source of strength and motivation in living a difficult life.

Getting closer to God by performing worship rituals

The findings of this study indicated that most participants tried to gain peace of mind by getting closer to God through rituals of worship such as prayer, dhikr, chanting, and giving alms. There are also spiritual aspects, namely trusting (surrender to God), sincerity by accepting the difficult conditions and having faith in destiny. Mohr et al. (2011) explains that spirituality is a means for soul recovery to increase self-confidence and relieve feelings of difficulty. Lukoff (2007) stated that spirituality is a part of soul recovery through worship rituals such as praying and reading scriptures. Survivors can gain peace, self-confidence, develop their self-worth as humans, and gain optimism in living life.

The results of a study by Piyasil et al. (2011) about tsunami survivors in Thailand found a strong influence of spiritual values such as acceptance of God's will and belief in destiny (faith) on the resilience of survivors. Spiritual values can be protective factors that strengthen the resilience of survivors, so they are safe from more severe psychological problems. Previous studies showed that protective factors in the form of spirituality could increase the resilience of survivors (Hayward, & Krause, 2014; Uyun, & Witruk, 2016).

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Taking wisdom from disaster to become a better human being

A phenomenon has meaning because someone experiences it and gives meaning to the experience (Suryani, 2013). After the disaster, most of the participants felt they had developed into stronger personalities through the experience and wisdom gained when experiencing life difficulties. The lessons learned include being better at dealing with stress, becoming more religious than before, trying to be a better human being, and finally feeling more grateful for what they have. Raj and Subramony (2008) revealed that the ability of survivors to take wisdom from an unpleasant event in life indicates success in carrying out the process of adaptation to adversity. The study also showed that the survivors had strong resilience. It supports a study by Irmansyah, Dharmono, Maramis, and Minas (2010), that survivors with strong resilience can develop ways of changing stressful situations into an opportunity to become a better personality.

Some participants believed that the disaster was a warning from God so that the wisdom could be gained in the form of efforts to improve themselves to become a better human being. The effort to take lessons from a disaster is motivated by the beliefs held by most of the participants in this study. In the perspective of being a Muslim, participants believe that there is always wisdom behind adversity. This is also reported by Musa et al. (2014) in a study related to tsunami survivors in Aceh, Indonesia. Survivors with high spirituality tend to take lessons from the difficulties experienced, especially after the tsunami disaster. By taking lessons from the conditions of difficulties caused by disasters, survivors gain peace and confidence in overcoming life's difficulties.

This study has its limitations. The participants in this study were the survivors who directly experienced the earthquake disaster in Lombok, and only a small number of survivors were involved in this study. As a result, the findings of this study cannot be generalized to the broader population. However, the findings of this study have the potential to fill a "blind spot" in knowledge about the lived experience of earthquake disaster survivors.

CONCLUSION

In this study, four new insights found, namely the ability to deal with stress through the effort to joke and laugh, feeling accustomed to earthquakes, surviving the threat of thieves and looters, and taking lessons from disaster to become a better human being. In conclusion, the life experience of a natural disaster survivor is a long journey where survivors try to survive and adapt to difficult conditions. Therefore, they can turn a stressful state into an opportunity to develop themselves into better personalities than before. The results of this study are expected to be a reference for nurses in making greater contributions to overcome psychological problems after a disaster by enhancing the spiritual aspects of victims, trauma healing, playing therapy, and peer support groups.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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The Application of Acceptance Commitment Therapy (ACT) and Family Psychoeducation (FPE) to Clients with Schizophrenia and Aggressive Behavior

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ABSTRACT

Background: Aggressive behavior frequently occurs in clients with schizophrenia and causes injuries to the clients themselves, others, and the environment. It becomes one of the most common factors causing rehospitalization in schizophrenic clients. Aggressive behavior can be managed by the intervention administered by nurses in the usual way (treatment as usual; TAU) as well as psychotherapy (acceptance and commitment therapy; ACT and family psychoeducation; FPE).
Purpose: This study aimed to investigate the effectiveness of acceptance and commitment therapy (ACT) and family psychoeducation (FPE) on schizophrenic clients with aggressive behavior.
Methods: This study used a case series method to report four selected cases of schizophrenic clients with aggressive behavior. Acceptance and commitment therapy (ACT), family psychoeducation (FPE), and treatment as usual (TAU) were delivered to four clients with aggressive behavior for six weeks using the Stuart Stress-Adaptation Model.
Results: The finding showed decreased symptoms of aggressive behavior in cognitive, affective, physiological, behavioral, and social aspects and increased ability to control anger, to accept their problems, and to commit to the therapy after ACT, FPE, and TAU interventions.
Conclusion: This report showed that TAU, ACT, and FPE effectively decreased the symptoms of aggressive behavior and increased the clients' ability to control anger.

Keywords: Acceptance and commitment therapy; family psychoeducation; aggressive behavior; case series; schizophrenia

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BACKGROUND

Aggressive behavior is one of the responses to stressors that appears as self-destruction and causes damage to others and the environment either verbally or non-verbally. Aggressive behavior is exhibited mostly by clients with schizophrenia (Stuart, 2013). According to previous research, 3,187 clients with schizophrenia experienced the risk of violent behavior such as attacking and threatening 4.3 times higher than the general population (Fleischman, Werbeloff, Yoffe, Davidson, & Weiser, 2014). Another study showed that of 1,033 patients with schizophrenia, 31% (1 in 3 patients) were aggressive and hostile (Knezevic et al., 2016).

Aggressive behavior in schizophrenia is associated with the lack of 5-hydroxyindoleacetic acid (5-HIAA) concentration and the enhancement of dopamine and norepinephrine metabolism in cerebrospinal fluid which causes an impulsive response (Stanley et al., 2000). Command hallucinations such as listening to the voice of command to harm and to commit suicide are also the trigger factors of aggressive behavior in clients with schizophrenia (Haddock, Eisner, Davies, Coupe, & Barrowclough, 2013), while other factors include a history of childhood aggressive behavior, antisocial personality disorder, substance abuse, and unpleasant experiences (Volavka & Citrome, 2011). Unpleasant experiences that cause feelings of insecurity, rejection, and tenderness tend to be expressed by someone with aggressive behavior to cover up those feelings (Stuart, 2013).

The aggressive behavior committed by clients with schizophrenia might increase the cost of health care because it is the most frequent cause of clients' admission to the hospital, and the length of stay will be longer since the signs of aggressive behavior are persistent (Volavka, 2014). Another impact of aggressive behavior is the enhancement of stigma in society because people with mental disorders are considered to be dangerous and should be avoided, leading to discrimination and social inequality (Torrey, 2011). This stigma becomes the strongest reason for the family to undertake confinement or locking (*pasung*) of clients with schizophrenia and aggressive behavior (Buanasari, Daulima, & Wardani, 2017).

There are three stages of aggressive behavior management in clients with schizophrenia which are prevention strategies through education and assertive training; anticipatory strategies such as proper communication and environmental modification, including family, medication, and psychotherapy; and crisis management through seclusion and restrain (Stuart, 2013). The effectiveness of prevention strategies through social way and de-escalation has been revealed in the previous studies to be able to improve the clients' ability to control anger and to reduce the intensity of seclusion and restrain as well as invasive interventions (Richmond et al., 2012; Keliat, Azwar, Bachtiar, & Hamid, 2009).

Anticipatory strategies through usual nursing intervention which combines physical, social, spiritual, and medication methods significantly reduce the length of stay in the hospital (Keliat, Azwar, Bachtiar, & Hamid, 2009). Crisis management strategies such as restrain and seclusion are the last option if all the ways are unsuccessful. However, it should be conducted according to the standard and procedure, and it even requires

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debriefing or expressing feeling sessions after the restrain involving both the clients and the health workers, given that restrain and seclusion are traumatic experiences (Goulet & Larue, 2016). In the case of this research, the clients were to be given interventions that focused on preventive and anticipatory strategies through treatment as usual (TAU), acceptance and commitment therapy (ACT), and family psychoeducation (FPE).

One of the anticipatory strategies for the management of aggressive behavior is psychotherapy such as acceptance and commitment therapy (ACT). ACT is a third-wave behavioral therapy with the purpose of not changing the clients' unpleasant experience but to get them to respond to the stressors in order to live with the problem peacefully and of fostering positive behaviors for them to achieve their goals (Hayes, 2004). ACT in previous literature was shown to have significantly reduced signs of aggressive behavior (53.49%) (Sulistiowati, Keliat, & Wardani, 2014) and effectively decreased rehospitalization after a 4-month to 1-year follow-up (Bach, Hayes, & Gallops, 2012).

The environmental modification that involves the family is also important since the family plays a crucial role in the client's care management (Susanti, Lovell, & Mairs, 2018). This statement is true as the burden felt by families living with clients with schizophrenia is significantly high and affecting the families' quality of life (Stanley, Balakrishnan, & Ilangovan, 2016). Family psychoeducation (FPE) is one of the nursing interventions for the family to improve the family's ability to provide appropriate care for the client (Caqueo-Urízar, Rus-Calafell, Urzúa, Escudero, & Gutiérrez-Maldonado, 2015). FPE has been proven to be effective in improving the prognosis and social functioning and in reducing the recurrence rate of children with psychosis (Gearing, 2008). FPE was also effective in reducing symptoms of aggressive behavior in clients with schizophrenia by increasing the clients' ability to control anger and improving the families' ability to care for the family members with aggressive behavior (Setiawan, 2017).

Nursing treatment as usual (TAU) has been conducted widely by psychiatric nurses on clients with schizophrenia in Indonesia, but psychotherapies are still rarely known and applied by nurses in the country. Several studies showed a better outcome when TAU combined with psychotherapies (Bach, Gaudiano, Hayes, & Herbert, 2013; Ghouchani et al., 2018). Previous studies already showed the effectiveness of acceptance and commitment therapy in schizophrenia, but there was no study published in case series about administering ACT and FPE together in Indonesia, specifically on clients with schizophrenia and aggressive behavior. This case series study showed a nursing process that combines ACT and FPE with TAU as a feasible and effective treatment option for nurses in treating aggressive behavior in psychosis.

OBJECTIVE

This case series study aimed to investigate the effectiveness of acceptance and commitment therapy (ACT) and family psychoeducation (FPE) combined with treatment as usual (TAU) on clients with schizophrenia and aggressive behavior.

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METHODS

Design and participants

This study was conducted using a case series as an observational descriptive research design. The case series was selected to present several cases with the same characteristics, same intervention, and specific selection criteria. Four cases of clients with aggressive behavior were selected to be reported in this article according to some certain criteria such as clients having paranoid schizophrenia, having a history of aggressive behavior, having an unpleasant experience related to aggressive behavior, having a relapse history, having received TAU and ACT, and having families receiving FPE.

Ethical consideration

Each client has provided written informed consent to ensure that he/she joined the therapy voluntarily and met the ethical criteria. This study has received permission from Marzuki Mahdi Hospital for reporting.

Interventions

The interventions were carried out by providing nursing treatment as usual (TAU) and ACT for the clients and FPE for the families. TAU was conducted in collaboration between the researchers and the ward nurses 7 times and evaluated at each meeting. TAU consisted of 1) physical intervention such as deep breathing exercise and anger release methods like hitting soft objects, 2) medication management, 3) social intervention such as feeling expression and asking and rejecting exercise, and the last, 4) spiritual intervention.

Acceptance and commitment therapy was applied 7 times as well by the researchers in 4 sessions for an average of 30–45 minutes *each session*. The sessions consisted of 1) discussing unpleasant events or experiences, 2) discussing responses related to unpleasant experiences, 3) identifying impacts of responses and acceptance exercise, and 4) identifying the value of the clients and discussing how to commit to the therapy and to achieve the clients' goals based on their value. The intervention was not only given to the clients but also for the families.

FPE was administered by the researchers to the families for them to provide support for the clients during visits to the hospital or when in contact with family members at the hospital by telephone. The researchers called the family to ask for approval and invited them to the hospital to join the research. FPE was conducted on the families 2–3 times in 6 sessions for 45–60 minutes each session. FPE sessions consisted of 1) identifying clients' health problems and educating the families to care for the health problems, 2) educating the families about other health problems, 3) family stress management, 4) family burden management, 5) utilizing the support system, and 6) evaluating the benefits of family psychoeducation. The whole interventions were conducted for 6 weeks using the stress adaptation model by Stuart.

Evaluation

The evaluation process carried out by assessing the symptoms and abilities of the clients. The symptoms assessment used a tool assessment instrument that developed

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based on the Stuart model with a total number of symptom items of 47, consisting of 12 cognitive symptom items, 12 affective symptom items, 9 physiological symptom items, 9 behavioral symptom items, and 5 social symptom items. The score ranged from 0 to 47; the higher the score, the worse the symptoms, and vice versa.

The clients' ability assessment for TAU consisted of 4 items, namely, 1) the ability to do deep breathing relaxation, 2) the ability to understand the right drug administration, 3) the ability to express feelings when angry and know how to reject and ask for help in a good way, and 4) the ability to do spiritual activities to control anger. Meanwhile, the ability assessment for ACT consisted of 3 items, namely, 1) the ability to express unpleasant events and identify the values in them, 2) the ability to accept illness and unpleasant experiences, and 3) the ability to commit to preventing recurrence. There are 7 ability items in total, and the score ranged from 0 to 7; the higher the score, the better the ability. The evaluation performed by assessing the alteration of the symptoms score and the clients' ability for each meeting.

RESULTS

Characteristics of clients

All participants were clients with schizophrenia who were treated in the adult ward. The specific history of each client is shown in Table 1.

Table 1. Client's history

No	Name (Age)	History
1	Mr. W (25)	Has a mental illness since 2013, admitted to the hospital for the 3rd time due to aggressive behavior, and had a command hallucination to harm others. Withdrawal from antipsychotic drugs over the last few months had been stocked for two weeks, felt pressured by his brother. Antipsychotic drugs included Depakote 2x2 mg, Onzapine 1x15 mg, and Trihexyphenidyl 2x2 mg.
2	Mr. S (31)	Has a mental illness since 2014, admitted to the hospital for the 3rd time because of aggressive behavior toward friends. Discontinuous antipsychotic drugs for the last 6 months, an unpleasant experience due to humiliation by friends and parents. Antipsychotic drugs included Haloperidol 3x5 mg, THP 3x2 mg, Risperidone 2x2mg, Clozapine 1x25mg.
3	Mr. Wi (22)	Has a mental illness since 2013, admitted to the hospital for the 3rd time due to aggressive behavior, consumed excessive cigarettes, and antipsychotic drugs. Had experiences related to parental divorce and has been pressured by his mother. Antipsychotic drugs included were Haloperidol 3x5 mg, THP 3x2 mg, Risperidone 2x2 mg, Clozapine 1x25 mg.
4	Mr. D (27)	Has a mental illness since 2009, admitted to the hospital for the 2nd time because of attacking his neighbors. Had a history of irregular antipsychotic medication, consumed tramadol, and marijuana. Unpleasant experiences were the death of his grandmother and bullied by his schoolmates. Antipsychotic drugs including Haloperidol 3x5 mg, THP 3x2 mg, Risperidone 2x2 mg, Clozapine 1x25 mg.

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Symptoms and clients' ability after TAU, ACT, and FPE

The alteration of the symptoms number and clients' ability number during the seven meetings are explained in Table 1.

Table 2. Symptoms and clients' ability alteration at each meeting

Meeting	Symptoms				Client's Ability			
	Mr. W	Mr. S	Mr. Wi	Mr. D	Mr. W	Mr. S	Mr. Wi	Mr. D
M1	9	12	9	13	1	1	2	2
M2	9	11	9	12	3	2	3	3
M3	7	9	7	10	4	4	4	4
M4	6	6	4	7	4	4	5	4
M5	4	6	2	7	5	4	5	4
M6	1	3	2	5	6	6	6	6
M7	1	2	0	4	7	7	7	7

M=Meeting

Table 2 shows the results of the symptoms evaluation and the clients' ability from the first day to the seventh day after TAU, ACT, and FPE. In general, the table explains that the clients experienced decreased numbers of symptoms and increased ability after interventions. In all clients, the frequency of meetings was more in social ways and drug adherence intervention. In ACT intervention, most clients experienced repetition two to three times in session 3, while in FPE intervention, the second session repeated more often. In Client 1, there was a consistent decline in symptoms at each meeting. However, there was still one cognitive symptom left at the end of the intervention. The client still revealed that he was unable to communicate and express his feelings well. In Client 2, an increase in ability and decrease in symptoms also obtained after the combination of intervention, but there were still two residual symptoms left. They were cognitive symptoms (blaming) and social symptoms (feeling rejected).

In Client 3, there were no more behavioral and physiological symptoms found in the initial assessment. The most symptom reduction was obtained at meeting 4 after giving FPE to the family. At the last meeting, there were no signs of risk of aggressive behavior found in Client 3. This might be caused by the contribution of the family along with the nurses to meeting patient needs and healthcare outcomes. In Client 4, there were more symptoms of aggressive behavior left at the last meeting compared to the other clients. The symptoms included blaming, irritability, instability, and feeling rejected by the people around him. We also found that Client 4 had a history of drug abuse, which could be a factor that contributed to the worsening of the symptoms of mental illness.

DISCUSSION

The results of this study revealed that all clients showed a significant decrease in aggressive behavior symptoms and an increase in the ability to control anger after TAU and ACT. The better the ability of the client, the lesser the symptoms show, as seen in

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Table 2. The effectiveness of TAU already discussed in the previous research. Clients with aggressive behavior showed an improvement in the ability to control anger independently through the physical intervention, medication compliance, social way, and spiritual way as well as a reduction of length of stay at the hospital (Keliat, Azwar, Bachtiar, & Hamid, 2009). TAU delivered along with acceptance and commitment therapy. The results showed that ACT also reduced the symptoms of aggressive behavior and increased the clients' commitment to the therapy. Commitment capability proved by the adherence of the clients to the therapy program and the medication. This result is in line with that of a previous study, which stated that medication adherence of the clients had increased both after the provision of education and ACT (52.7%) and after the provision of only ACT (36.85%). A combination of ACT and TAU also reported being more effective in decreasing aggressive behavior and in improving the general health of the clients with psychosis than a sole TAU (Ghouchani et al., 2018). ACT was also significantly effective in improving the positive symptoms of schizophrenia (Shawyer et al., 2016), reducing the rate of relapse, and reducing the cost of care for clients with psychosis (Butler et al., 2016).

Unpleasant experiences were found in all clients as factors of aggressive behavior, and most of the clients reported family conflicts as one of such factors. However, problems with the environment, including with friends, could also trigger aggressive behavior in the clients**.** A previous study confirmed that the aggressive behavior committed by clients with schizophrenia was a response to the sense of loss, or rights deprivation by others, followed by feelings of frustration, fear, unfairness, and anger, which caused them to conclude that others were responsible for their problems (Rueve & Welton, 2008). Unpleasant experiences or feeling humiliated could influence the content of the hallucinations experienced by clients with schizophrenia (Hayward, Strauss, & McCarthy-Jones, 2014). In this case, one client experienced command hallucinations to injure others. Clients who experienced hallucinations to injure themselves and others felt like the voice makes them very powerful and obliged to follow the command (Shawyer, Mackinnon, Farhall, Trauer, & Copolov, 2003; Bucci et al., 2013).

The results stated that there were still residual symptoms left in cognitive and social aspects, such as blaming and feeling rejected. The reasons why residual symptoms persisted in several clients might be related to the duration of ACT intervention. A previous study revealed that ACT effectively decreased the symptoms of psychosis in clients with traumatic experiences such as sexual abuse and schizophrenia and increased their acceptance of the disease as well, albeit over a longer duration (12 sessions) (Jansen & Morris, 2017). Another factor that caused the higher number of residual symptoms in Client 4 might be due to the client's substance abuse history that might be worsening the symptoms of schizophrenia (Green, Noordsy, Brunette, & O'Keefe, 2008).

Conflict in the family, as expressed by Clients 1, 2, and 3 was critical because family is the main support system for the clients. The bad relationship between the clients and the families was often due to the high burden of care. Families who were living with the schizophrenic clients revealed burdens (Rafiyah, 2011; Susanti, Lovell, & Mairs, 2019), both objective burden such as time and cost of care (85.3%) and subjective burdens

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such as feelings of shame, worry, and disruption to personal time (84.2%) (Lasebikan & Ayinde, 2013). The high burden of caring for a family member with schizophrenia then attributed to a high expressed emotion (EE) in the family. EE defined as a behavior or emotion such as criticism, anger, or blame, or an inclination to show rejection to people with mental illness (Amaresha & Venkatasubramanian, 2012; Nirmala, Vranda, & Reddy, 2011). High EE in the family causes people with schizophrenia to feel unaccepted and unsupported and causes their risk of relapse to increase (Bogojevic, Ziravac, & Zigmund, 2015).

Family psychoeducation (FPE) was delivered to the families to improve their ability to perform the five family health tasks as the families expected to be the main support system for the clients. The important roles of the family can be seen from the results showing all clients experienced significant symptoms of relief following FPE therapy. As Client 4 had no family conflict history, the feeling of being taken cared for by and getting support from the family seemed to be a great cause of the client's symptoms improvement. The effectiveness of FPE was also shown in a previous study, which stated that FPE was effective in reducing the severity of schizophrenia symptoms in the clients not only shortly after the intervention but also 1 month after (Sharif, Shaygan, & Mani, 2012). Another study has also shown that FPE increased the family's active participation in client care management as well as enhanced the client's compliance with medication, prevented relapse, and improved social functioning (Ran, Chan, Guo, & Xiang, 2015).

This study described the whole process of nursing care for clients with schizophrenia and aggressive behavior, but it also had some limitations that should be addressed. The limitations to consider are that this study had no control group and that it had no analysis of client medication which allowed the researchers to compare and ensure the effectiveness of the therapies.

CONCLUSION

This study stated that nursing intervention as usual and acceptance and commitment therapy combined with family psychoeducation could be a better choice to help clients reduce the symptoms of aggressive behavior and improve their ability to control anger. This study recommends combining the nursing intervention as usual with another psychotherapy in a clinical setting and to strengthen family involvement in clients' treatment through family psychoeducation to get a better outcome, especially in clients with aggressive behavior. Furthermore, ongoing follow-up research is necessary to measure how well clients are committed to their therapy.

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CONFLICT OF INTEREST

None

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Mental Distress in Rural Areas of Indonesia

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ABSTRACT

Background: There is a higher prevalence of mental distress in rural areas compared to urban areas in Indonesia. The rural areas of Indonesia have various socio-demographic and sophisticated cultural characteristics, but less exposed to foreign cultures. Thus, the study about the prevalence, associated factors, and predictors of mental distress in rural areas is necessary.
Purpose: This study aimed to identify the population's status and related factors of mental distress in rural areas in Indonesia.
Methods: A descriptive cross-sectional study was conducted to achieve the aims of the study. An Indonesian version of the Self-Rated Questionnaire, consisting of 20 items, was used to measure mental distress status of population in rural areas in Yogyakarta, Indonesia. A number of 872 records were included and analyzed using both univariate and bivariate analyses in this study.
Results: The prevalence of mental distress in this population was 6%. The correlated factors of mental distress were age ($\chi2$=6.93, p=0.01), gender ($\chi2$=0.07, p=0.03), occupation ($\chi2$=0.26, p=0.02), housing dimension ($\chi2$=5.45, p=0.02), and illness status ($\chi2$=0.01, p<0.01).
Conclusion: The prevalence of mental distress in rural areas of Indonesia is relatively lower than that of the national level. Future mental health programs may be focused on improving mental health on the elderly, male, vulnerable workers, overcrowded housing, and people who got a chronic illness.

Keywords: Community based screening; mental distress; mental health; rural area

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BACKGROUND

Mental health is one of the psychological components in the biopsychosocial model that arranges health during the human life span (Lehman, David, & Gruber, 2017). Mental distress is one of the mental disorders characterized by an emotional change that can develop into a pathological condition (Idaiani, 2010; Idaiani, Kusumawardani, Mubasyiroh, Nainggolan, & Nurchotimah, 2017). An overlook on stress management may develop severe mental illness on many people with chronic diseases and mild distress (DE Hert et al., 2011).

In Indonesia, the rural population has a higher prevalence of mental distress (10%) compared to urban areas. A rural population also tend to have these sociodemographic characteristics such as a rather high proportion of people aged over 75 years old (15.8%), females (12.1%), less educated (13.9%), and unemployed (13.0%) (Ministry of Health of Republic Indonesia, 2018). A study in low-middle income countries showed that gender (female), employment status (employed and self-employed), daily alcohol, and abuse were found to be the correlated factors of developing mental distress (Abbay, Mulatu, & Azadi, 2018). In rural India, women’s work demand (high amount of housework, including cleaning and collecting water) is also associated with mental distress (Richardson, Nandi, Jaswal, & Harper, 2017). Furthermore, mental distress is also associated with a history of diseases. The risk of mental distress is in line with the number of chronic illnesses. Subsequently, respondents with hepatitis and stroke were the most experienced mental distress (Widakdo & Besral, 2013).

The Indonesian government’s recent effort to promote mental health is by the Mental Health Awareness Village program *(Desa Siaga Sehat Jiwa [DSSJ])* that is initiated by the Ministry of Health of the Republic of Indonesia (Ministry of Health of Republic Indonesia, 2018). One of the DSSJ programs is mental distress screening using the self-rated questionnaire (SRQ-20). This program has been implemented both in urban and rural areas to get the prevalence of mental distress data. However, Indonesian people have various social-demographic, sophisticated cultural characteristics in dealing with the problem, and less exposed to foreign cultures. Therefore, a study about the prevalence and factors of mental distress in rural areas is needed, so that an appropriate prevention and promotion program can be effectively developed in the future

PURPOSE

This study was conducted to identify the population’s status and factors of mental distress among the population in rural areas in Indonesia.

METHODS

Design and samples

This study used a descriptive cross-sectional research design. It was conducted from February to July 2018 in rural areas in Yogyakarta, Indonesia. Three of five villages were chosen purposively by its population. These villages included Kralas, Sraten, and Suren Wetan, with an estimation of the total population that met the inclusion criteria, were 1500 residents. The inclusion criteria were people age over 15 years old and literate.

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Research instrument and data collection

Two questionnaires were used in this study, including the SRQ-20 (Indonesian version) and the socio-demographic questionnaire. The SRQ-20 was developed by WHO and modified into the Indonesian version by the Ministry of Health of Indonesia to measure mental distress. This questionnaire consists of 20 items question with Guttman scale (Yes/No), and a total score equal to or more than 6 represent cases. The sensitivity of SRQ-20 in the English version is 83% and 80% for specificity (Harding 1989). The sociodemographic questionnaire consisted of age, sex, occupation, religion, family history of physical disability or diagnosed with a severe mental disorder, monthly income, and housing dimension.

Training in administering the set of questionnaires was given by the research team to the youth cadres in the three villages. This was also part of the study to enable the population to perform screening by themselves. The data collection was conducted by trained *Posbindu* cadres. Within four weeks, the cadres did the data collection using a set of questionnaires, including informed consent. In order to ensure a high response rate and solve any data collection challenges during the period, there was an evaluation process every two weeks.

Data analysis

There were 1500 distributed questionnaires, and the response rate of the questionnaire was 1225 of 1345 (89.7%), with 872 data included in the analysis. Data obtained were inputted, cleaned, and statistically analyzed in SPSS. A descriptive analysis was used to identify demographic data and mental distress status. Meanwhile, the bivariate analysis was used to identify the factors of mental distress in rural Indonesia. The Chi-square test and logistic regression were used depending on the data type of the variables.

Ethical consideration

The ethical approval of this study was obtained from the Ethics Committee, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada.

RESULTS

The response rate of this study was 89.7%; despite the incomplete data, 71.2% of the returned questionnaire was able to be analyzed. The mean age of respondents was 39.96 years old (*SD*=16.48), and there were more females (50.5%). Most of the respondents work as non-civil servants, while the average monthly income was IDR 1,426,632 (*SD*=IDR 709,112). The average housing dimension was 83.74 $m^{2,}$ with three to four people on average living in the same house. Most of the respondents reported being in a healthy condition (87.5%). In addition, there were 71 respondents with family members suffering from severe mental health illness (Table 1).

Table 1. Distribution of the demographic data of respondents (n=872)

Variable(s)	*f*	%	Mean (*SD*)	Min-Max
Age			39.96 (16.48)	15-92
Gender				
Male	570	46.5		

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Variable(s)	*f*	%	Mean (*SD*)	Min-Max
Female	619	50.5		
Occupation				
Civil servant	39	4.5		
non-civil servant	448	51.4		
Entrepreneur	80	9.2		
Student/not yet employed	287	32.9		
Retired/unemployed	18	2.1		
Education				
Not educated	59	6.8		
Elementary to high school	667	76.5		
University	146	16.7		
Religion				
Islam	824	94.5		
Christian	42	4.8		
Catholic	6	0.7		
Monthly income (IDR)			1,426,632 (709,112)	150.000-7,000,000
Housing dimension (m^2)			91,18 (96,35)	2 - 1160
Number of people at home			4 (1.34)	1 - 11
Illness status				
Being sick	109	12.5		
Not sick	763	87.5		
The family member with severe mental health illness				
Yes	71	8.1		
No	801	91.9		

The SRQ-20 interpretation, as presented in Table 2, showed that the prevalence of the mental distress in those three villages was 6%. Dusun Kralas has the lowest prevalence of residents with mental distress (5.3%), and Dusun Suren Wetan has the highest prevalence, of 6.8%. As shown in Table 2, there is also a relatively similar trend on mental health status, around 93.2 to 94.7% of the population with normal distress status.

Table 2. Distribution of SRQ-20 score interpretation (n=872)

Area	Mental distress status		Total (*n*)
	Normal	Mental distress	
All villages	820 (94%)	52 (6%)	872
Kralas	429 (94.7%)	24 (5.3%)	453
Sraten	159 (93.5%)	11 (6.5%)	170
Suren Wetan	232 (93.2%)	17 (6.8%)	249

The bivariate analysis of the social-demographic data and SRQ-20 interpretation showed that age, monthly income, housing dimension, the number of families living together, and illness status had a statistically significant relation with mental distress (Table 3).

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Tabel 3. Mental distress and the related factors (n=872)

Variable(s)	Frequency Normal Distress	Frequency Mental Distress	*χ2*	*df*	*p-value*
Age			6.93	1	0.01*
Gender			0.07		0.03*
Male	397	17			
Female	423	35			
Occupation			0.26		0.02*
Civil servant	39	0			
Non-civil servant	427	21			
Entrepreneur	71	9			
Student/not yet employed	269	19			
Retired/unemployed	15	3			
Education			0.08		0.08
Not educated	54	5			
Elementary to high school	623	44			
University	143	3			
Religion			0.20		0.78
Islam	774	50			
Christian	40	2			
Catholic	6	0			
Monthly income (IDR)			2.76	1	0.10
Housing dimension (m^2)			5.45	1	0.02*
Number of people at home			0.34	1	0.56
Illness status			0.17		<0.01*
Being sick	91	18			
Not sick	729	34			
The family member with severe mental health illness			0.01	1	0.97

** Significant with p=0.05*

DISCUSSION

This study aimed to identify the population's status and related factors of mental distress among the population in rural areas in Indonesia. This study showed that mental distress prevalence at the coverage area of *Puskesmas* (public health center) Jetis II was lower than that of Yogyakarta province and Indonesia (6%: 10.0%: 9.8%) (Ministry of Health of Republic Indonesia, 2018). This result slightly differs from a previous study by Islam (2019), which found that people in rural areas tend to have a higher prevalence of mental distress compared to the urban area. Similar to an estimation of psychological distress prevalence in Bangladesh in 2018, it is shown that people who live in a semi-urban area significantly more prevalent with psychological distress than rural (Islam, 2019).

According to socio-demography data, some variables that significantly related to mental distress are highlighted. Those variables are age (*χ2*=6.93; *p*=0.01), gender (*χ2*=0.07; *p*=0.03), occupation (*χ2*=0.26; *p*=0.02), housing dimension (*χ2*=0.45; *p*=0.02), and illness status (*χ2*=0.01, *p*<0.01). This result is in line with the WHO report, which stated

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that the social and economic status had an effect on mental health (World Health Organization, 2018).

People with chronic illness, low welfare, and the elderly had a risk of developing mental disorders (World Health Organization, 2018). In a veteran housing, depression was observed among 13.4% of patients with Chronic Obstructive Pulmonary Disease (COPD) while there are only 9.3% of patients without COPD ($p<0.001$) (DE Hert et al., 2011; Garrido et al., 2017). Moreover, health problems such as deterioration of health, mobility function, daily activity, and socioeconomic are rising in older people (Cao, Chen, Tian, & Jiang, 2015). All of those problems can increase the stressor, so it raises the case of mental distress, which may explain that mental distress is more common in older people compared to younger and middle adults (Sutin, Stephan, & Terracciano, 2018).

Both women and men have their own context of resistance and disability of social life functions that may affect mental distress (Timander & Möller, 2018). Furthermore, a study by Lowry, Johns, Gordon, Austin, Robin, & Kann (2018) reported that those who do not meet society's expectations (behavior and appearance) based on gender or so-called gender nonconformity have a strong association with mental distress among young adults in the US. The form of this mental distress includes substance use and suicide, and feeling sad and hopeless. It is also known that males are more prevalent with gender nonconformity than females, moreover with lesbian or gay, bisexual, and they who "are not sure" about their gender. This research adds further evidence of the correlation between gender and mental distress. Apparently, males tend to have a higher risk of developing mental distress (Smith, Schacter, Enders, & Juvonen, 2018).

The average monthly income of the respondent's was IDR 1,426,632 (SD=709,112) for all occupations, and it was grouped by low income (below IDR 1,454,154,15) based on the minimum wage at Yogyakarta Province (Pemerintah Daerah DIY, 2017). This finding in line with a study by Suyoko (2012), which reported that the prevalence of mental distress in people with low economic status is 0.8 times higher than those with high economic status (Suyoko, 2012). This research shows that there is no correlation between monthly income and mental distress. On the other hand, occupations were statistically significant to the presence of mental distress.

It is argued that occupation is not only related to economic status, but also the work demands, including psychological and social work demands (Finne, Christensen, & Knardahl, 2016). However, it is supported by the result of the basic health research by the Ministry of Health of Republic Indonesia (2018) that the unemployed (13.0%) were the group with the highest prevalence of mental distress. Regarding the relation between financial distress and overall distress, it was reported that financial distress was associated with overall distress, while emotional distress mediated this association. In addition, the total effect of financial distress on overall distress was - 0.727 (Meeker et al., 2016)

Even though this research shows that there is no correlation between mental distress and the number of families in one home, another study shows the opposite. Grinde and

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Tambs (2016) found this factor difference in the group of age. In children, they will have a lower risk of mental distress with an increasing number of member families who live together. Their family members, especially adults, will protect them and become their playmates, which can support their mental condition. In contrast, that situation can add a stressor for adults. It can increase the possibility of sibling conflicts or conflict between children and parents, which can improve the risk of mental distress (Grinde & Tambs, 2016). However, Indonesia has a sophisticated culture that flourished by the society. Intergenerational support may bring support in maintaining better mental health in the rural area (Schröder-Butterfill, 2004).

The dimension of the home is significantly related to mental distress (Grinde & Tambs, 2016). It is assumed that these factors were also linked to the number of family members who live together, which indirectly affects the personal space of the home. Personal space is a space that makes people feel safe and comfortable. If the invasion of this space presents, stress might happen. A previous study stated that caregiver of people with mental illness who lack social support is strongly associated with mental distress, although, in this study, those dependent variables failed to be factors that statistically significant related to GME (Sintayehu, Mulat, Yohannis, Adera, & Fekade, 2015).

In addition, respondents with a chronic illness have a risk of 2.6 times of mental distress. Respondents with two chronic illnesses have a risk of 4.6 times of mental distress, and respondents with three chronic illnesses have a risk of >11 times (Widakdo & Besral, 2013). That physiological disorder has a direct effect on the deterioration of social function and finally improved mental distress (Stuart, 2007). Furthermore, based on the health statistic and information system estimates for 2000-2012 data, depression caused by chronic disease can decrease life expectancy for around 20 years (Islam, 2019). Depression or anxiety that develops from physical illness might be one of the risk factors to heart disease, stroke (Clarke & Currie, 2007), diabetes (Aikens, Rosland, & Piette, 2015; Clarke & Currie, 2007), cancer (Meeker et al., 2016), and also acute illness (Stewart-Ibarra et al., 2017); thus, it can increase morbidity and mortality (Clarke & Currie, 2007)

This study has limitations. A cross-sectional research design was used in this research, as it draws a better understanding in terms of current information regarding the mental distress topic in the rural areas. However, this research may not be relevant in the long run, so a follow-up survey may be needed in the future. Aside from a rather high participation rate, the results of this study may not be generated to all rural areas in Indonesia as the data were collected from specific areas in Yogyakarta province. More sites need to be included to draw generalizations in interpreting the result of the study. As this study was concerned with rural areas, further investigation is needed to study mental distress is urban areas.

CONCLUSION

The sociodemographic status, such as older age, gender (male), occupation, small-size housing, and being ill, were found to be correlated factors of having mental distress in rural Indonesia. Based on the results of this study, it is suggested that *Puskesmas* may

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consider developing mental distress prevention programs by considering age, gender, occupation, housing size, and illness status to improve their outcome, particularly in mental health. Further research on the same topic in other rural areas in Indonesia, including the remote ones, is necessary.

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CONFLICT OF INTEREST
The authors declare no conflict of interest.

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