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HIV/AIDS health education toward enhancing knowledge and HIV prevention efforts in household wife☆

Yulia Irvani Dewi*, **Yufitriana Amir**, **Fathra Annis Nauli**

Faculty of Nursing, University of Riau, Indonesia

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KEYWORDS
AIDS;
Education;
HIV;
Knowledge;
Leaflets;
Prevention;
Videos;
Women

Abstract
Objectives: this study aimed to identify the influence of health education about HIV/AIDS towards enhancing knowledge and HIV prevention efforts in household wives.
Method: A quasy experimental design with pretest and posttest nonequivalent control group study was conducted among housewives in Rumbai Pekanbaru, Riau Province from March to August 2018. A systematic random sampling technique was used to select 144 housewives. A total of 72 intervention groups and 72 control groups. The intervention group was given health education with videos and leaflets. A questionnaire that it tested for validity and reliability has been applied. The Paired-Samples *T*-Test and Independent Samples *T*-Test were applied to analyze data.
Results: There were differences in pretest and posttest preventive knowledge and prevention behavior scores on HIV in the intervention group (p-value = 0.000). However, there was no significant difference in prevention behavior in the control group (p-value = 0.0120). Based on this results, it can be concluded that health education can increase the knowledge and behavior of prevention of HIV/AIDS in household wives (p-value = 0.000).
Recommendation: The health education on HIV/AIDS counseling and testing are key interventions for reducing number of HIV/AIDS cases. It is recommended that housewives to conduct HIV status on health services, and for HIV program holders are expected to increase the frequency of health education by using attractive media and VCT mobile services in order to reach more housewives.

Introduction

Indonesia is facing a lot of challenges by contacting the HIV/AIDS epidemic which is a widespread occurrence of an infections disease in this particular community. Family

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* Corresponding author.
E-mail address: yuliairvanidewi@gmail.com (Y.I. Dewi).

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spouses are a team at the chance of being contaminated with HIV/AIDS from their spouses through sex-related transmitting. The Health Indonesian Ministry revealed that HIV among females is 12.302 cases (34%) which are considered in the third place. The main exposure category for all females in Indonesia is heterosexual which is accounted for about 68% of all new AIDS cases within this team. Considering the reports from January to March 2017 shows that, the widest variety of this incident in Indonesia are caused by average women in the city, namely 12,302.[4] This incidence also occurred in Riau Region, and it was recorded in this region that 147 cases of HIV occurred from January to March 2017, and Pekanbaru city has the biggest HIV and AIDS cases.[11]

The case above demonstrates that women are one of the risky categories contaminated with this disease called HIV. Many aspects that causes insecure woman are aspects of knowledge, hardship, biology and some other additional factors.[1] Research on average women in Pekanbaru city revealed that housewife's understanding of HIV and AIDS is low, they have the wrong perception about HIV/AIDS transmitting, and tend to be close to husband's sex-related actions. Deficiency of adequate knowledge on the HIV transmitting would lead to failure to take safety measures and consequently result in an acquisition of infection. Along with uneducated and poverty, gender inequality and an inability to successfully settle more secure sex with their associates have been noted as reasons for enhancing in the burden of HIV among females.[10,13] Apart from heterosexual contact and injecting drug use, depression, physical and sex-related abuse. Mostly, the absence of condom negotiation abilities is some of the psychosocial factors of HIV threat actions among women.

If a proper measure is not taken, this will certainly be a threat to women and the next generations. Therefore, an appropriate treatment is needed by involving stakeholders and women themselves on HIV preventive measures. Women have some important roles to play in the family and community order, to conquer the problem in spreading of HIV/AIDS in the society. A housewife is expected to have the knowledge and details about HIV/AIDS. This detail does not only cover the mechanism for the transmitting of HIV/AIDS but also cover the ways or procedure on how to prevent it.[3] As long as the HIV/AIDS prevention system is targeted at threat categories or key population, whereas women, especially average women are insecure categories. Community-level treatments have been used less regularly, yet they are needed to broadcast health promotion messages that impact individual behavior change and strengthen social norms to succour and reinforce such change. Women need to be equipped with skills and training to enhance their abilities to barter more secure sex practices with their partners. Protection initiatives for knowledge and power have regularly targeted on an alternative involvement in Pekanbaru. Therefore, we performed these studies to examine the effect of health education on knowledge and HIV prevention initiatives among household spouses.

Methods

A queasy experimental design with pre-test and post-test non-equivalent group was performed among household wives in Rumbai, Pekanbaru, Riau Region from March to August 2018. A systematic random sampling technique was used to select 144 women. A total of 72 involvement intevention and 72 control groups. The intervention group was given health education with audio visual and leaflet for them to have a full understanding of health related HIV/AIDS. The inclusion criteria were females who: (1) were married, (2) were reproductive age variety between (20–50 decades old). The validity and reliability of the developed questionnaire were tested, and the right of a subject was respected in this study. The eligible subject was individually approached to join in the study. Case study objectives are; the data collection processes, expected research outcomes, subject right, the type of questionnaire, and the right to refuse to participate in the study were explained. The subject agreed to join were assured that information would be kept private and revealed as group data. The Paired-Samples *T* test and Separate Examples *T*-Test were also used in this study to analyse information. The standing panel on values in Ethical Review Board for Medicine and Health Research of the Faculty of Medicine, University of Riau approved these studies (reference no.345/UN.19.5.1.8/UEPKK/2017).

Results

The result of the homogeneity test of the respondents' features both of the intervension group and the control group revealed that there were no important variations in the two categories. In this study, some 144 women were included. The age of women ranges from 20 to 50 years old. Majority of the subject (67%) were 31–40 years old. Around forty-three of respondents had Minangnese and Java etc. Approximately half of the subject were middle of education level (48.61%).

Based on Paired *t*-test results revealed that there were variations in knowledge ratings before being given HIV/AIDS education with *p*-value = 0.000 with something different in mean different of 4.36 in the involvement group, while in the control group there was also something different in ranking with *p*-value = 0.000, with something different in mean different of 0.98. In prevention group, there are also variations in mean before and after the intervention with *p*-value = 0.000 with something different in the ranking of =5.30. However, there was no significant in the control group ($p = 0.120$), with something different in ranking distinction of 0.95. Based on the outcomes of the independent samples *t*-test research acquired *p*-value = 0.000. The outcome is that there is something different in mean meaningful knowledge between the involvement group and the control group, where the control group knowledge ratings are lower than the experimental group. Furthermore, the outcomes of the HIV prevention group research acquired *p*-value = 0.000. In summary for this study, Ho is rejected, and Ha is accepted. There were significant differences in mean HIV knowledge and behavior between the intervention and control groups (Table 1).

Discussion

Health education performed in these studies refers to the issues experienced by the respondent. Problems were

Table 1 Independent sample *t*-test results of changes in knowledge and HIV/AIDS prevention behavior in intervention groups and control groups in Pekanbaru, 2018.

Variables	Mean	SD	Mean different	95% CI		p^*
				Lower	Upper	
Knowledge						
Experiment**	12.86	1.190	3.167	2.60	3.73	0.000
Control	9.69	2.114				
Prevention						
Experiment**	41.13	5.205	8.403	0.879	6.66	0.000
Control	32.72	5.340				

Note.
* $p < 0.05$ significant.
** Approximately 1 month after pre-test.

identified through the process of distributing questionnaires to various respondent's in the previous year (2017) and the focus group discussion with stakeholders that are responsible for the HIV/AIDS program in Riau Region, those in charge of Pekanbaru's HIV/AIDS program, holders of HIV/AIDS program in health centers, HIV-focused NGOs, and women empowerment in Pekanbaru city. The problem discovered include lack of household wife knowledge about HIV/AIDS, such as causes, transmission, prevention, and treatment. Also, the respondent considers that HIV is not possible to transmit to them because they feel confident about their husband and their sex-related behaviors. These results are very identical with the result of research performed by Wulandari et al. [14] which refers to 88 people (51.8%) have a high knowledge about HIV/AIDS prevention on housewives. Similarly,[8] research declares that all participants ($n = 40$) have a high level of understanding about HIV/AIDS and its prevention, which includes understanding, causes, ways of transmitting, prevention and treatments for HIV/AIDS. HIV/AIDS relevant knowledge, perceptions, and behavior change among most married women in India, of whom 67% (236) were aware of HIV/AIDS.[6]

According to Notoatmodjo,[7] the health education component is divided into three factors namely; predisposing factors in the form of knowledge, attitude, values, perceptions; enabling factors in the form of availability of resources, affordability of referrals, staff skills, and reinforcement factors in the form of attitude and behavior. The three components are essential in health education so that it will enhance and alter the behavior of household wives for this study. Health education in these study is a combination of ''women's empowerment video's on HIV/AIDS prevention'' and leaflet to give more enlightenment on HIV/AIDS. This is possible to increase HIV/AIDS prevention knowledge and behavior in household wives. The result of research by Ueda et al.[12] stated that the educational program that combines theory and practice is better and more effective. One of the supporting factors in improving knowledge and prevention behavior is age and level of education. In these study most of the respondent were <40 years old, 46.53% were between 31 and 40 years, and 29.86% were age between 20 and 30 years. This age is a productive age, where someone will easily accept and actively seek information related to HIV/AIDS.[9] argued that main influencing factors for having good knowledge towards HIV/AIDS were women aged <30 years old and have high education.

Furthermore, the most household wives' education was the middle of education (48%) to get related information about HIV/AIDS, and the most of research respondent received information about HIV/AIDS from various sources such as health workers (doctors, nurses, midwives), television and social media. In most cases, the higher level of education will help you to obtain the details provided.[2] Education that has been pursued by someone is a factor that will assist an individual's ability to receive information, the higher the level of education an individual has the broader perspective and way of thinking in dealing with conditions or problems that occur around.[7]

The result of the paired sample *t*-test shows that the research in the intervention group declares that health education can enhance household wives to have more knowledge about HIV. This is evidenced by an increase in posttest knowledge score of 4.36 points. Likewise, preventive behavior increased by 5.30. In the control group, there was also an increased in posttest knowledge of 0.98, while in the prevention behavior the score decreased by 0.958. This occurred because the respondent did not receive information directly from the video clips and leaflet. Respondents only receive information about HIV/AIDS from health workers and on television programs. Based on research data collection, most of the respondent in the control group had a secondary education of (48.6%), and some had a low education of (40.3%), only 11.1% were highly educated out of the 100%. However, the education and information that has been acquired do not have a major influence on increasing the knowledge about HIV/AIDS.

The result of the independent test t-test research revealed significant results (*p*-value 0.000), this means that the HIV/AIDS prevention knowledge and behaviors in the intervention group which was better than the control group. This happened because education about HIV/AIDS in the intervention group was carried out using appropriate educational media for housewives. These results are quite similar with the result of research carried out by Ifroh and Ayubi's[5] which review in his study that the combination of audio-visual media ''Aku Bangga Aku Tahu'' and group discussion is effective in increasing adolescent knowledge about HIV/AIDS.

Conclusions

This study shows that there were differences in score knowledge and behavioral precautions before (pretest) and after (post-test) about HIV in the intervention group. There are also differences in pretest and posttest knowledge in the control group, but there are no differences in preventing HIV/AIDS behavior. This research discovered that educational media (videos and leaflets) impact the knowledge and behavior of protection against HIV/AIDS in housewives or average women. For housewives, it is expected to further enhance HIV/AIDS prevention initiatives by conducting an HIV check into health services. For health centers to increase the frequency of health education with Voluntary Counseling test mobile services, so they can reach more housewives.

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Organ failure of patients using ventilator based on the sequence organ failure assessment score (SOFA) admitted in Intensive Care Unit☆

Siti Rahmalia Hairani Damanik*, **Gamya Tri Utami**, **Sofiana Nurcahyati**, **Safri**

School of Nursing, Universityof Riau, Indonesia

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KEYWORDS
ICU;
Organ failure;
SOFA;
Ventilator

Abstract
Objective: This study aimed to describe the relationship between the score of sequence organ failure assessment (SOFA) and the length of time of vventilatoruse by patients hospitalized in Intensive Care Unit.
Method: This research is analytic observational with a cross-sectional design. Data collected include age, sex, diagnosis medic, length of stay in ICU, length of ventilator use and SOFA score. The SOFA components include respiratory, platelet, liver, neurology, cardiovascular, renal and urine output in 24 h. The data platelet and liver were collected based on the new data. The respiratory data used FiO_2/SaO_2; Neurological data used Glow Coma Scale value; and cardiovascular data used mean atrial pressure value (MAP). Each organ system is assigned a point from 0 to 4. The SOFA scores range from 0 to 24. The highest score is defined as the worst condition. This instrument was created by the European Society of Intensive Care Medicine. The number of samples was 40 patients who admitted in ICU for two days minimum. The data were collected in two months by a team. Data collected were analyzed by percentage, mean, and fisher exact to see the relationship of SOFA score and duration to use the ventilator. The data were analyzed by Fisher exact statistic because there are three cells have expected account less than 5.
Results: Majority of the respondents admitted in the ICU caused of neurological function with mean of SOFA score of 7.78 (score minimum is 4 and score maximum 12). The duration used ventilator majority less than 3 days (55%). The result shows that there was the relationship between the score of SOFA with duration to use ventilator (p value <0.01). The highest score of SOFA is indicating more severity of the function of organ respiratory.
Conclusions: SOFA score is one instrument for evaluating the severity and prognosis of the patients.

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* Corresponding author.
E-mail address: lia_dmk@yahoo.com (H.D. Siti Rahmalia Hairani Damanik).

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Introduction

As the patients entering the ICU really need monitoring, one of the tools that can be used is the sequential organ failure assessment (SOFA) scoring. Organ dysfunction can be identified as an acute change in Sequential (Sepsis-related) Organ Failure Assessment score $\geq$2 as a consequence of infection.

SOFA scores include 6 organ functions, namely respiration, coagulation, liver, cardiovascular, central nervous system, and kidneys are chosen based on the literature review, each of which has a value of 0 (normal function) to 4 (very abnormal) which gives the possibility of values from 0 to 24. SOFA scoring is not only assessed at one time, it can also be assessed periodically by looking at the increase or the decrease in the score. The variable assessment parameters are said to be ideal for describing organ dysfunction or failure. The main objective of scoring organ failure is to describe the sequence of complications, not to predict mortality.

Organ dysfunction is a process that often occurs in patients who experience critical illness due to serious illness. Evaluation of organ dysfunction every time the treatment in the ICU is very helpful in following disease development and can provide a strong correlation picture with the end result of ICU care. A number of physiological parameters are used to define organ dysfunction, such as lung, cardiovascular, renal, hepatic, hematological, and central nervous systems.

The most common failure in patients admitted to the ICU is the failure of respiratory function to require a ventilator machine to maintain their lives. Patients with ventilators are very skilled at the disease, often called ventilator-associated pneumonia. This will also weigh on other organ functions so that the condition can be increased to accelerate other organ failures.

Assessing organ dysfunction in patients admitted to the ICU is one method that can also be used to reduce death. This assessment is also a continuous assessment of valuing and solving the problem that often gives a sense of satisfaction to the customer and achieving the quality technical education.

The SOFA must be measured for all patients treated in the ICU to differentiate the level of anger and mortality. Information from the SOFA review can also see the prognosis of the patient's severity. It can also improve the percentage of patients in his family, as well as can be used for the condition experienced by the most convenient for intervention. The SOFA is used for the measurement of severity in serial and functional organs on a serial basis every day.[1] Although the value of the level of severity of the Acute Physiology and Chronic Health Evaluation Simplified Acute Physiology Score based on the first 24 h in the ICU is very different from the SOFA, it covers all of the participants in the participation cycle as a whole. This is what nurses must do to maintain the entire disease process.[6]

Formulation of the problem

ICU patients who require ICU care need to do triage specifically for an effective and en efficient work system and the quality of service provided. The treatment given to patients is also a continuation and can require a very long time. For an additional treatment, the assessment of the disease of the sufferers is especially affected in patients who use ventilators as respiratory aids because the length of the use of ventilators will affect all the organs of the patients related to infection and oxygenation. Based on the rationales and considerations, the problem of this study is formulated as: *what is the relationship between length of time of ventilator use and SOFA score?*

Method

Research location

This research was conducted in the Intensive Care Unit of the Hospital Arifin Achmad Pekanbaru. This research site was chosen as it is a reference to the ICU in Riau Province. It is also the place for practice of medical and nursing students and nearly 50% of those treated using a ventilator.

This research was carried out for two months in which the measurement conditions used the form to determine the health status of patients. The samples used in this research are patients being treated in the ICU who admitted in ICU from outside submissions and the ventilator is mounted. The samples were forty patients who used ventilators selected using accidental sampling technique.

Types and sources of data

The data to be measured from the samples are data related to the demographic data, medical diagnosis, long day care, ventilator mode, and scoring the SOFA covering the functions of liver, heart, lungs, and kidneys, neurological and bodily fluids. The data were obtained by looking at the results of laboratory examination, physical examination, observation of the monitor or the daily chart.

Data collection techniques

The results of the SOFA examination laboratory were taken from the results of the last examination that was close to when taking data. The data were about platelets, liver function (bilirubin) and PaO_2 and creatinine. For the values of MAP, GCS and FiO_2 as well as fluid balance, they were taken when the research project was undertaken.

SOFA scoring was calculated using an observation sheet. The SOFA was measured by the researcher by looking at the data from the observation sheet and the results of the diagnostic tests that were in the patients' status. The diagnostic examination data were taken based on the latest date for platelet measurement and liver function. Data of GCS, MAP, and FiO_2/PaO_2 were measured based on the conditions when the researchers arrived. 24-h urine was taken from the observation of fluid balance measurements at 07.00 WIB on the day of the study. The type of ventilator mode was recorded at the time of the study too. There was also notes about the day of the patients using the ventilator. The duration of using a ventilator was categorized as *never use*, *more than three days* use and *less than three days*. Patients who use less than three days means that the weaning process can be done perfectly. The SOFA score data indicates that the

Table 1 The relationship between ventilator use and SOFA score.

Ventilator use	SOFA score				Total		*p* value
	Good		Poor		*n*	%	
	n	%	*n*	%			
Not use	0	0	6	15	6	15	0.001
<2 days	0	0	22	55	22	55	
>2 days	0	0	12	30	12	30	

higher the patients' condition, the more critical and more actions are needed to maintain the condition and to improve the patient's condition.

Results

This study examined the relationship between ventilator use and SOFA score in patients who were admitted to the ICU Arifin Achmad Pekanbaru Hospital who were treated for at least two days by 40 respondents.

The majority of respondents using ventilators were in early adulthood (43.8%) and males (52.5%). Most of them were treated less than three days in the ICU. The majority of respondents used ventilators less than two days (55%) with 100% SOFA score of more than 2 with an average of 7.8. Where the mean value of GCS was 8.8; MAP was 88.75; PaO_2 was 79.8; and urine output for 24 h with a mean of 1332.7 ml.

Based on the duration of the ventilator use by 40 respondents, most of them used ventilators for more than two days (48 h). There is very significant relationship which means that patients who use ventilators more than 2 days ($p < 0.001$) will be at risk for organ infections that can lead to increasingly severe organ failure. See Table 1 for the data of the relationship of ventilator use and SOFA score.

Discussion

Organ failure scores in patients at the ICU can help predict the length of stay.[1] SOFA scores can be used to predict the prognosis of a patient's critical condition. Score SOFA was designed and developed to objectively evaluate failures in one organ or several organs. Components that are assessed based on SOFA are easy to assess and count to see the patient's condition. Data were measured based on patients' clinical data and laboratory data.

The results showed that the SOFA score had a relationship with the duration of ventilator use in patients admitted to the ICU. The longer a ventilator is used, the bigger patients have a higher SOFA score. This shows the prognosis to get worse. Based on the results of the research of six components measured, namely respiration, cardiovascular, hematological, renal, liver and neurological functions, high levels of SOFA indigo were found to be a function of respiratory and neurological organs. In respiratory conditions from the average results, it was found that the SOFA score was above two (2.95) because patients possessed PaO_2/FiO_2 conditions between 100 and 200. This indicates that the oxygen level in the patients' body is not optimal and can cause other organ dysfunctions. The condition of low PaO_2 will cause hypoxia which can subsequently cause vasodilatation of brain blood vessels. This will be followed by an increase in the rate of blood flow to the brain and the result will produce lactic acid and metabolic acidosis. The long reduction in PaO_2 will affect on the level of consciousness. The binding of O_2 by hemoglobin will also aggravate hypoxia in cerebral and cause the respiratory function to be heavier and the death rate due to severe cerebral hypoxia increases.[5]

MAP of patients with ventilator was influenced by the position.[3] Patients with the highest MAP in semi-fowler position at 15 degree and in this study showed that MAP patients were in normal conditions.[4] This means that systemic venous return is normal to heart and tidal volume is not problematic in channeling oxygen carried by hemoglobin and plasma to meet tissue requirements in metabolic processes. Kidney function is still capable of performing its functions and can be seen from the results of research that urine secreted in the kidneys is still in enough limit.

The finding shows that the relationship between SOFA scores and the duration of ventilator use is strongly related ($p < 0.001$). This indicates that patients who have a low SOFA score use a shorter ventilator where the majority of respondents use a ventilator less than 2 days. The patients' meaning is minimal for infection due to ventilator use or Pneumonia associated Ventilator[1] (VAP).

Ventilator Related Pneumonia/Associated Pneumonia Ventilator (VAP) is an inflammation of the lung parenchyma caused by a bacterial infection that incubates when the patient receives mechanical ventilation using a mechanical ventilator. Provision of prolonged mechanical ventilation (more than 48 h) is the most important factor causing nosocomial pneumonia. VAP is defined as pneumonia which appears more than 48 h after endotracheal intubation and initiation of mechanical ventilation.[2] VAP divided into early onset which occurs within the first 96 h of mechanical ventilation and late onset that occurs more than 96 h after administration of mechanical ventilation.

Mechanical intubation and ventilation can increase the risk of VAP. The use of intubation that is not really needed should be avoided as much as possible. Non-invasive ventilators that use face masks can be used as an alternative in ICU patients who use a ventilator because they have a smaller risk of VAP when compared with invasive ventilator use.[2] Several studies have identified the duration of ventilator use as one of the important factors triggering VAP. In patients with mechanical ventilation, the incidence of VAP increases with the length of ventilation and is not constant from time to time using a ventilator.

Conclusion

The majority of respondents using ventilators were in early adulthood (43.8%) and males (52.5%). Most of them were treated less than three days in the ICU. The majority of respondents used ventilators for less than two days (55%) with a 100% SOFA score of more than 2 with an average of 7.8. Data on the relationship between the duration of the use of a ventilator and a SOFA score shows that these two variables have a very significant relationship with $p < 0.001$.

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The effectiveness of simulation health education to mother breastfeeding skill between two groups in rural area of Riau, Indonesia☆

Agrina*, **Febriana Sabrian, Reni Zulfitri, Arneliwati, Herlina, Ari Pristiana Dewi**

Community Health Nursing Division, Faculty of Nursing, Riau University, Indonesia

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KEYWORDS
Simulation health education;
Breastfeeding skill;
Rural mothers

Abstract
Objective: To evaluate the effect of health education by simulation for improving breastfeeding mother's skill in rural area in Riau.
Methods: This study was quasi experimental posttest-only control design. Purposive sampling was used to recruit 26 mothers who have breastfeeding experience in Posyandu (child and mothers health post) in Perambahan village as rural area in Riau, Indonesia. Thirteen respondents as intervention group and 13 respondents as control group in this study. Two weeks after implementing the breastfeeding educational through simulation technique in the intervention group, observed checklist to assess mother skill was completed by researcher.
Results: Fifty-three point eight percent of respondents were 20–35 years old, 80.8% mothers education level were low education in junior and senior high school level and 96.2% of them did not have any formal job outside at the home. There was a significant of mean difference in the breastfeeding mother's skill between intervention and control groups, 7.0 and 4.5 respectively ($p < 0.01$).
Conclusions: Health education technique was important thing to increase the breastfeeding mother's skill. The simulation is appropriate as one of the methods in health education for mothers.

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* Corresponding author.
E-mail address: agrina@lecturer.unri.ac.id (Agrina).

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Introduction

Breastfeeding is the main food for the baby. The benefits of breastfeeding to infant health as well as the society in general are well documented. Breast milk contains nutrients, at specific percentages, needed for the growth and development of infants. Consequently, breastfeeding is the main source of nutrition for babies.[1,2] In the same vein, breastfeeding has been associated with lower rates of gastrointestinal, respiratory, and urinary tract infection and less atopic illness during the first year. Moreover, supplying the complementary food before 6 months of baby age is correlated to child undernutrition.[3,4]

The World Health Organization (WHO) recommends Exclusive Breastfeeding (EBF) for the first six months of a baby's life and continuation of the breastfeeding for up to two years.[5] Despite the fact that the importance of breastfeeding is well known throughout the world, many mothers from both developing and developed countries stop breastfeeding before the WHO recommended. It was recorded by UNICEF that only 38% of all infants born in developing world got exclusive breastfeeding in the first six months of their life and that majority of the mothers provide alternative food supplements for their babies under six months.[6] Indonesia, as a developing country, is not excluded from these problems. A study carried out on Pekanbaru, one of the urban areas in Indonesia, shows that majority of nursing mothers in the area gave some form of complementary food to their babies under 6 months because they feel that giving them only breast milk is not enough.[7]

In the past two decades, the role of maternal self-efficacy in the initiation and during the process of breastfeeding has been increasingly shown to be of great importance. A high maternal self-efficacy results in longer duration of breastfeeding by mothers because of the confidence they have in its continuity. This is confirmed by different studies that have shown that there is a positive correlation between maternal self-efficacy and the duration of breastfeeding.[8,9] There is possible extension of this duration when mothers receive appropriate nursing interventions, continuing support and evaluation which can be in form of educational programs that are introduced in order to promote breastfeeding. According to a study by Pugin et al.,[10] providing breastfeeding skill-based education to expectant mothers before birth increases breastfeeding rate. It emphasises that early introduction of appropriate and effective interventions will also help mothers achieve the recommended six months exclusive breastfeeding.

The findings of the research show that mothers that received prenatal education experience an increase in the duration of breastfeeding as well as the skills and knowledge involved in the process. However, it was reported that despite the efforts of Indonesia government in promoting breastfeeding, the EBF rate is still lower than expected.[11] A study carried out in Riau, a rural area of Indonesia, shows that the prevalence of exclusive breastfeeding was only 30.8% in the area and the major reason cited by mothers is that they feel that breast milk only cannot satisfy infants in their first six months.[12] Moreover, the study also reveals that most of the mothers engage in wrong breastfeeding techniques.

The study carried out in Indonesia show that breastfeeding skill is one of the most important factors needed in achieving a successful EBF practice. This study is aimed at evaluating the effect of using simulation technique of health education to improve breastfeeding skills for mothers in rural area of Riau.

Method

This study made use of a quasi-experimental posttest-only control design. The research was conducted between July and September 2018. Purposive sampling was used to select 26 mothers who have had breastfeeding experience in Posyandu (child and mother's health post) in Perambahan village as rural area in Riau, Indonesia. Thirteen of the selected respondents were used as intervention group while the remaining thirteen respondents were used as the control group for the research. The observation sheet used in the research contained 8 breastfeeding techniques which served as a guide in assessing the breastfeeding skills of these mothers. After the simulation technique had been implemented in the intervention group for two weeks, the observation sheet was used to assess the breastfeeding skills of the mother. Independent *T*-test was applied in this study to compare the difference between the mean of the 2 groups.

Results

The result of the research showed that 53.8% of the 26 respondents were in the reproductive age of 20–35 years old with senior high school (42.3%) as their highest level of education. It was also discovered that majority of the respondents were housewives (96.2%) and that 80.8% of their family income were below the city minimum income for a month. Majority of the mothers, represented by 88.5% were

Table 1 Socio-demographic characteristics of mothers.

Characteristics	Frequency	Percentage (%)
Age		
25–35 y.o.	14	53.8
>35 y.o.	12	46.2
Education		
Elementary	4	15.4
Junior high	10	38.5
Senior high	11	42.3
University	1	3.8
Working		
House wife	25	96.2
Teacher	1	3.8
Family income[a]		
<IDR 2.516.000	21	80.8
≥IDR 2.516.000	5	19.2
Living with		
Nuclear family	23	88.5
Extended family	3	11.5

[a] Based on city minimum income a month.

Table 2 Mother breastfeeding skill between intervention and control group after intervention.

Mother skill	Control group		Intervention group		Total	
	N	%	*N*	%	*N*	%
Not good	8	30.8	5	19.2	13	100.0
Good	5	19.2	8	30.8	13	100.0

Table 3 The difference mean of mother's breastfeeding skill between intervention and control group after simulation health education.

Respondent group	*N*	Mean	SD	Min	Max	*p* value
Intervention	13	7.00	0.913	6	8	0.000
Control	13	4.54	1.330	2	6	

reported to be living in a nuclear family circumstances as shown in Table 1.

Table 2 shows that the number of mothers that performed good breastfeeding skills were lower in control group, 5 respondents, compared to the 8 respondents recorded in the intervention group after the intervention procedures.

Furthermore, Table 3 shows that the mean for breastfeeding skill for mothers in intervention group was 7.00 (SD 0.913) while a mean of 4.54 (SD 1.330) was observed for the control group after the simulation technique was used in educating them. A mean difference with *p* value of 0.000 was discovered between the 2 groups after the intervention.

Discussion

The result of this research shows that the use of simulation technique of health education is an appropriate method of intervention that can be use in increasing breastfeeding skill of mothers. This is supported by the higher percentage of 30.8% recorded by the use of the method for the intervention group compared to the 19.2% recorded by the control group. A difference was also observed in the skill category of the mothers in the two groups after the intervention procedure.

Many factors have been discovered to be the cause for the inability of mothers to carry out exclusive breastfeeding successfully for 6 months and breastfeeding skill has been observed to be one of them. Previous studies have revealed that despite the advantages offered by breast milk to infants, EBF is not popular among mothers. Mothers have been found to be feeding their babies with other foods thinking that breast milk may not be sufficient for them.[7] This thought and reasoning have been associated with the lack of knowledge about breast milk by mothers. Another study also revealed that poor feeding techniques could be the reason why mothers failed to engage in EBF.[12]

Failure of adequate breastfeeding has been observed to be caused by latch on mistakes as well as wrong positioning of babies during the process. This results in decreased production of milk by the breast and, consequently, leads to early termination of exclusive breastfeeding. This can be rectified through appropriate interventions such as the simulation technique employed in this research. This has been established by the results of this research which show that the intervention has a significant effect on the breastfeeding skills of mothers with a *p* value <.01.

The research shows that simulation technique makes it possible for participants to get a real understanding of an education activity through the use of visual demonstration. This is supported by a research conducted by Wardani.[13] This study result showed that majority of the mothers only as housewife and they have low level of education, the demonstration method was very influential in increasing their rate of absorption and interest in learning. It can be deduced that using counseling kit in health education can optimize the learning quality of participants.

Lack of breastfeeding knowledge and skill make mother is easy to supply the complementary feeding for their babies.[14]

Conclusion

The use of simulation technique is appropriate in increasing the breastfeeding skills of nursing mothers. This is important because the use of good breastfeeding skill contributes to improvement in the rate of EBF in Indonesia.

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Spirituality and health status among elderly people in nursing home in Riau, Indonesia☆

Herlina*, **Agrina**

Community Health Nursing Division, Faculty of Nursing, Riau University, Indonesia

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KEYWORDS
Spirituality;
Health status;
Elderly in nursing home

Abstract
Objective: The purpose of this study was to examine the relationship between spirituality and health status outcome in nursing home (PSTW Khusnul Khotimah) in Pekanbaru, Riau-Indonesia.
Method: This study methods was a cross-sectional study with 36 elderly people as samples and it was taken by total sampling technique. JAREL Spiritual Well-Being Scale was used to assess elderly people spirituality level. Univariate and bivariate use non-parametric analysis were performed to determine the relationship between elderly people spirituality and self-reported health status.
Results: Majority marital status of respondent (85.8%) were divorce with their couple. Seventy two point two percent elderly health status was not good and 52.8% (the results spiritual statement of indicates: When I was sick, I reduced spiritual welfare 33.3%, I cannot accept changes in my life 27.8%) of them have less spirituality. This study also found that the elderly people who has low spirituality level more likely have health problems. There was significant correlation between spirituality and elderly health status in nursing home ($p = 0.035$).
Conclusion: It was important to increase the elderly people spirituality to prevent health status degradation in elderly people in nursing home.

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* Corresponding author.
E-mail address: her_lina82@ymail.com (Herlina).

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Background

Various diseases increase in elderly people, especially a disease cardiovascular, endocrine disorder as diabetes mellitus, etc. Elderly people suffer at least one chronic disease, but most of them are suffering more than one disease. It can be neutralized and eliminated with high spirituality on their daily lif.[9]

Spirituality is all aspect which is about the person's relationship with non-material life or higher strength.[12] Spirituality was two dimensions concept i.e. vertical and horizontal dimension.[9] Spirituality can help someone is convinced to what happened, it is a part of the higher strength (God). According by research, the spiritual belief is very important because it can affect the health level and behavior self-care clients.[4]

Based on the result research, showed with the better spirituality of elderly people will motivate them to maintain their health.[10] The research it showed the result of significant correlation among spirituality elderly people and their lifestyle.[1] It means that good spirituality will have healthy lifestyle and absolutely will improve the status of elderly people health.

However based on the results of the introduction story to 10 elderly people that was conducted in Technical Implementation Unit of Tresna Werdha Social Service Khusnul Khotimah Pekanbaru, there is 7 elderly people of 10 people always attend the spiritual event held by the nursing home officers. The spiritual event held is to learn, *Wirid*, religion discussion by Ustad (Ceramah) held on Monday and Friday. While doing interview conducted by an officer social, these officers said that only 20% elderly people attend the spiritual event.

Based on these phenomena, the researchers want to know whether there was correlation between the spirituality and the status of elderly spirituality health.

Methods

This study was a cross-sectional study with 36 elderly as sample and it was taken by total sampling technique. The questionnaire used by the research is a questionnaire JAREL spiritual well-being scale, that is an instrument spirituality developed.[6] Univariate and bivariate to use non-parametric analysis are performed to determine the correlation between the elderly spirituality and self-reported health status.

Results

The majority of elderly age is being 60–74 range of the year. Education respondents mostly from elementary school (primary) and those with widower of 16 people (44.4%). Health status less well as the number of 26 (72.2%). But the status of spiritual elderly is low of 19 people (52.8%) (Table 1).

Elderly with low spiritual hence having health status less well as many as 89.5%. The analysis bivariat indicated significant relations between spirituality on health elderly (p value = 0.035) (Table 2).

Table 1 Characteristics of respondents.

Characteristics	Frequency	Percentage (%)
Age		
60–74 years	21	58.3
75–90 years	15	41.7
Gender		
Man	19	52.8
Women	17	47.2
Education		
Elemt. school	22	61.1
Junior high	6	16.7
Senior high	7	19.4
College	1	2.8
Religion		
Islam	34	94.4
Buddha	2	5.6
Marital		
Married	5	13.9
Widow	15	41.4
Widower	16	44.4
Health status		
Good healthy	10	27.8
Unhealthy	26	72.2
Spiritual		
High	17	47.2
Low	19	52.8

Discussion

The research was elderly people with the middle age have more time to attend he religion activity and trying to understand the value of religion belief to be.[3] At the time of the researchers found many respondents men than women in accordance with criteria of inclusion of the elderly who do not have health problems heavy (stroke) or who has reliance on an apparatus (stick). Thus, men have chance to be respondents than women in nursing home Khusnul Khotimah Pekanbaru.

The result of research showed that the latest education of elderly people most of them graduated from elementary school. This is consistent with the results of the study from National Commission for Elderly (*Komisi Nasional Lanjut Usia*) (2009) that the records are 65.70% elderly in Indonesia never schools and no schooling. This is in line with Raka (2016), a type of education will have an effect on the individual.[11]

The result showed that the faith value of elderly people is foundation to think and consider life in their old age. According by research that Islam has mental dimension from 5 pillars of Islam, then Islam can teach people to believe of Allah SWT will look after them until the end of time.[5] Religion approach is highly recommended to the elderly people to be able to overcome the problems or be spared from all disease issues.

Marital status on the research indicated that five respondents (13.9%) is still married, the rest of elderly people live in Khotimah of Nursing House are widow for 15 persons

Table 2 Correlation sprituality and elderly health status.

Spirituality	Health status				Total		*p* value
	Good		Less well		*N*	%	
	N	%	*N*	%			
High	8	47.1	9	52.9	17	100	0.035
Low	2	10.5	17	89.5	19	100	
Total	10	27.8	26	72.2	36	100	

(41.4%) and widower for 16 persons (44.4%). Functions as a spouse support in many ways e.g. emotion, problem solving, financial, and parenting. Spouse existence is available or have no spouse due to divorce, died, never been married.[7]

The unhealthy (sick) elderly need coaching, assistance and nursing service including the spiritual service, in order to they feel prosperous, appreciated, respected as the man who at the age of youth ever accomplished.[9]

Health status is one of the important elements for elderly people, they can fulfill their basic needs and spirituality needs. With an healthy condition elderly capable of running the religious uninhibited. Based on the research, healthy is one of important elements for the quality of life for elderly people.[2] This research is also supported from the result research that the chronic disease can decrease the elderly quality of life.[13] Based on the result data of elderly diseases on the research respondent of PSTW Khusnul Khotimah clinic is chronic disease i.e. hypertension (19 persons), gastritis (7 persons), osteoarthritis (5 persons) and many more. Moreover there are elderly whom suffer from more than one disease i.e. 16 persons i.e. hypertension and DM, gastritis and osteoarthritis.

The level of low spiritual would affect low behavior psychology. Low level spiritual of someone will affect low behavior psychosocial and it would be bad for elderly were easy to surrender, discourage.[8,15] Otherwise, when elderly has high spirituality will live calmly and deal with casually, can handle of living in a broader context.[11]

Elderly with low spirituality will affect psychosocial conduct faster, easily discourage, less handling of his life. This showed that the comprehension of spiritual needs are limited.[15]

The result research is supported from the research, stating that the confidence steadily with spirituality there is feeling peaceful and capable of acceptance experienced and believes what happened to them is regulated from God creation.[14] Boswell results, Kaha and Dilworth-Anderson (2006),[1] explained that spirituality and religion affect welfare or physical fitness of elderly. From her research,[1] explained that the spiritual status of elderly people associated with their lifestyle.

Conclusion

Elderly people with low spiritual also having unhealthy status are 89.5%. The analysis bivariate indicated that there is significant correlation between spirituality of elderly people's health (*p* value = 0.035).

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A concept analysis of maternal role in pregnant adolescent☆

Erika

School of Nursing, University of Riau, Indonesia

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KEYWORDS
Maternal role;
Pregnant adolescent;
Concept analysis

Abstract
Objective: The purpose of this study is to clarify the concept of maternal role in pregnant adolescent.
Method: The Walker and Avant's concept analysis (2005) was used in this study.
Results: The attributes are accepting pregnancy at young age, bonding and getting attached with their unborn baby, taking care of unborn baby, recognizing risk related to their pregnancy, dealing with emotions, and preparing for labor. The antecedents included: personal factor, environmental factors, and psychological factors. The consequences are improving adolescent health during pregnancy, increasing confidence, reducing the high risk of pregnancy at a young age, and giving birth safely. Empirical references to maternal roles of pregnant adolescent include their responsibility of the pregnancy, protecting unborn baby from harm, knowledge about pregnancy, changing behavior, and emotional well-being.
Conclusions: This concept analysis will help the author for developing instrument about the ability of pregnant adolescent to perform the maternal role during pregnancy.

Introduction

The issue of adolescent pregnancy is still a major issue worldwide[1] as there is high prevalence of the condition in many countries. Consequently, there is need for more attention from government and health care providers.

Identify uses the concept of maternal role

This aspect will explain the definition of maternal role from literatures and its theoretical perspectives.

Definition of maternal role from review of literatures

These are maternal role definition from the review of the literature. Naphapunsakul[2] defined the maternal role as a mother's behaviors and feelings in infant care which include confidence in providing care to the infant,

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E-mail address: rika_hardi@yahoo.com

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having a mother–infant relationship, and satisfaction in the maternal role. Then Mercer[3] defined it as an interaction and developmental process between mother and baby in childbearing. Pregnant women should be confident in performing the motherly roles with their infants.[4] Also, Rubin[5] defined maternal role as the tasks of a mother in preparing for the motherly role during pregnancy and one month after birth. And in short, a maternal role can be defined as a mother's ability to take the responsibility as an impending mother and roles performed to be healthy during the pregnancy and for the unborn baby.

Theoretical perspective of maternal role

In 1986, Ramona Mercer came up with a nursing theory, known as the Theory of Maternal Role Attainment. This theory has to do with maternal–child health and mothers' role to the children. It explains how mothers develop to the role of babies' keepers and this came on the premise that the roles played is based on the mother's experience which might be going on for years. More so, Mercer applied the role acquisition theory in developing this maternal role attainment theory through four progressive phases, which are: the anticipatory phase, the formal phase, the informal phase, and the role identity phase.[6]

The theory of maternal tasks in pregnancy by Rubin,[5] also talks about maternal role. Rubin explained about the role expectations of mother and how to explore it long enough to develop a sense of playing the role, while also selecting the behavior to come up with while performing it. The theory also talks about how a mother can solve the problems that may arise during pregnancy. Rubin described that the psychological work of pregnancy is divided into four domains and these are: safe passage, acceptance by others, binding into the child, and giving of oneself.

Differentiating the concept of maternal role from other closely related concept

Many concepts are used in the theory of Maternal Role Attainment and this makes its uses practical in different academic disciplines but more importantly in the nursing profession. There are so many concepts of maternal role but the two major ones identified and most closely related to its understanding are maternal role attainment and maternal identity.

And these two were defined by Alligood and Tomey[7] as follows.

Maternal role attainment is an interactional and developmental process taking place over a period of time, during which the mother becomes attached to the infant, acquires the needed competence in the care-taking tasks involved in the role, and expresses pleasure and gratification in it.

Maternal identity is defined as ''having an internalized view of the oneself as a mother''.[7]

And understanding these two concepts, as defined above, is integral to understanding the basis of Mercer's work.

Determining defining attributes

Attributes are those characteristics associated with the concept of maternal role which include: (a) accepting pregnancy at young age, (b) bonding and attachment with the unborn baby, (c) taking care of the unborn baby, (d) recognizing risk related to the pregnancy, (e) dealing with emotions, and (f) preparing for labor.

Identifying antecedents and consequences

There are three antecedents related to the concept of maternal role and these are explained as follows.

Personal factors: The component of personal factors include: pregnancy condition, wanted or unwanted child, and knowledge/beliefs/culture.

Pregnancy condition: During this pregnancy period, most women usually experience nausea and often vomit. And this will decrease the woman's appetite for food. A study by Sohail and Muazzam[8] found out that gestational age has a correlation with nausea during pregnancy and influences the behavior of these women.

Wanted or unwanted child: Pregnancy is a normal thing for a married couple but that is not the case for teens who are into open relationships. In South Africa, nearly one-third of the women were reported as having had a pregnancy in adolescent age, and most of these pregnancy were unwanted.[9]

Knowledge: Knowledge is one factor that affects the action to make a decision.[10] Adolescents' knowledge are limited when it comes to the role of mother during pregnancy.[11]

Environmental factors: The environmental factors include social support and social economics.

Social support: Some studies showed that social support functions can boost the mother's confidence in performing the maternal role during pregnancy till the point of birth.[12] According to Turnage and Pharris,[13] social support is an important aspect for these adolescents while transiting into the new role of motherhood.

Social economics: A number of pregnant adolescents are living in low social economic conditions and come from the poorest countries with low social status.[1] This in a way affects the important decisions made in such families.

Psychological factors: The psychological factors include stress and anxiety.

Stress and anxiety: Having a baby for adolescents when pregnant means an overall life change in terms of responsibilities from that stage to motherhood, and this period will cause them stress.[9] However, the consequences are improving adolescent health during pregnancy, increasing confidence, reducing the high risk of pregnancy at a young age, and giving birth safely.

Constructing a model case

A model case includes all attributes of the concept and illustrates such[14]

Mrs. Rn is a 17 years old Indonesian, married, in 32 weeks gestation, and living with the husband, a 22 years old young man, in the parents' house. This young woman regularly visits the health center for check up due to the love for the

unborn baby. According to this pregnant woman, the regular taking of healthy food and vitamin was a priority and already prepared to deliver the baby in a private clinic.

Analysis

All attributes of maternal role illustrated by this case showed that Mrs. Rn was confident, had an understanding of the roles of prospective mothers and did not fail in taking proper care of the pregnancy.

Development of additional cases

Borderline case

Mrs. Dn is a 16 years old Indonesian, married, in 34 weeks gestation and living with the husband, a 21 years old young man in a rented house. This pregnant women attended clinic for medical check-up once three times all through. This young woman was happy with the pregnancy, took good food but did not take vitamin because of its nauseating effect and yet to pick the clinic for the delivery of the baby.

Analysis

This illustration relates to maternal role, but it does not represent all the attributes. Mrs. Dn takes care of the pregnancy but does not follow some of the suggestions of the health care provider and yet to pick the clinic for the delivery.

Contrary case

Mrs. An is 16 years old, married, also an Indonesian in 28 weeks gestation, living with the husband, a 20 years old young man, in a rented house. The husband works as an office boy with the government in a different town form their parents. This would-to-be mother only attended antenatal care once. Also, this young woman did not know how to take care of the pregnancy and had limited knowledge on it before coming for antenatal care in the community health center.

Analysis

Mrs. An felt had no knowledge on how to take care of the and so was unconfident to be a mother to the coming baby.

Defining empirical reference

The final step of Walker and Avant's method of concept analysis has to do with the empirical references. This talks about how the concept is to be measured or what the observation should look like in reality. This is the event that demonstrates the existence of the concept.

Empirical references to maternal roles of pregnant adolescent include the responsibility to the pregnancy, protecting the unborn baby from harm, having knowledge about it, changing behavior, and the emotional well-being.

Conclusions

Conclusively, the concept of maternal role was selected for this analysis because pregnant adolescents have been recognized as serious issues in terms of carrying out the motherly roles during pregnancies. And the various studies considered also present evidence of the consequences of unprepared maternal role. The desire of the authors is that the analysis of maternal role be beneficial for nurses and other health care providers in gaining a better understanding of the concept and implementing it in appropriate nursing activities so as to assess the pregnant adolescent role.

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Identification and analysis of foot sensitivity and blood glucose levels post Apiyu massage☆

Yesi Hasneli*, **Yufitriana Amir**

Faculty of Nursing, University of Riau, Indonesia

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KEYWORDS
Alat Pijat Kayu (APIYU);
Blood glucose;
Foot sensitivity;
Diabetes mellitus (DM)

Abstract
Objective: To measure foot sensitivity and blood glucose levels among diabetic patients as measures of improvement pre and post Apiyu massage.
Method: Quasi experimental research was employed to measure foot sensitivity and blood glucose levels before and after APIYU massage for fifty-five (55) purposive sampled consented adult patients with diabetes from Rejosari and Langsat Health Centers in Pekanbaru Riau, Indonesia. The intervention was given about three times in a week for thirty (30) minutes.
Result: Revealed that there were significant differences between measures before and after massage using the Apiyu tool on: (a) mean sensitivity levels for pre-tests and post-tests on the right foot (pre-test 9.49, post-test 9.64; *p*-value = 0.011) and the left foot (pre-test 9.55, post-test 9.80; *p*-value = 0.004), and (b) blood glucose levels (pre-test 271.6, post-test 220.7; *p*-value = 0.001).
Conclusion: The APIYU massage was proven effective for improving foot sensitivity and reducing blood glucose among diabetic patients.

Introduction

Diabetes mellitus (DM) is a state of chronic hyperglycemia accompanied by a variety of metabolic disorders due to hormonal disorders.[2] The International Diabetes Federation (IDF) estimates that Indonesia is ranked 3rd largest DM patient in the world by 2025.[4] Changes in people's unhealthy lifestyles such as rarely doing physical activities, often consuming high cholesterol, sweet foods are the causes. This condition is one of the factors causing the high prevalence of DM patients in Pekanbaru Riau. Along with the increasing prevalence it will increase DM complications if there are no serious efforts to prevent, and improve in appropriate treatment and care.

One way that can reduce the blood sugar level and increase in foot sensitivity is reflexology. Reflexology therapy can have an effect in helping to improve disturbed blood circulation and can increase the sensitivity of the hands and feet in patients with DM.[1] The area of reflection is a region of nerve fissure that is spread throughout the related organs.[3]

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* Corresponding author.
E-mail address: yesi_zahra@yahoo.com (Y. Hasneli).

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Data obtained in general from interviews with 24 members of the DM from Rejosari and Langsat Health Centers Pekanbaru, obtained data that 19 of 24 people among them did not know of any complications from DM. They are not aware of foot exercises that can stimulate insulin production and can prevent foot ulcers.

Based on the data and problems above researchers are interested in developing APIYU's reflexology complementary therapy designed by the researchers themselves as one of the therapies that can increase the sensitivity of the foots and reduce the blood glucose levels of type II DM.

Method

This study used a Quasy Experiment with experimental and control group by purposive sampling technique. This research is done by pre-test and post-test. The study was carried out in the working area of the Rejosari and Langsat Health Center, Pekanbaru. Survey research was collected the sensitivity level of foot type II DM patients, doing APIYU foot massage and measuring the sensitivity of DM patients' foot. The populations in this study were all DM patients who went to the Rejosari and Langsat Pekanbaru Health Center. The inclusion criteria for the sample in this study were diagnosed with DM disease, at least 30 years old, respondents living in Pekanbaru, willing to become research respondents.

Results

1. Univariate analysis

Table 1 show the most age was the respondent at the end of the adult age (34–45 years). The majority of respondents were women with a total of 40 people (72.7%), and high school educated with a total of 26 people (47.3%). The majority of respondents' jobs are housewife as many as 36 people (65.5%). All respondents suffered from DM for 1–10 years. The majority of the respondent tribes were Malay as many as 27 people (49.1%).

Based on Table 2 the experimental group the mean value of the respondent's right foot before being given the intervention was 9.49 with a standard deviation (SD) of 0.71 and after being given intervention the mean value was 9.64 with a standard deviation of 0.52. The mean value of the respondent's left foot sensitivity before given an intervention is 9.55 with a standard deviation of 0.63 and after giving the intervention the mean value is 9.80 with a standard deviation of 0.40.

Table 3 show the mean value of respondents' blood sugar levels before given an intervention was 271.62 mg/dl with a standard deviation (SD) of 79.43 mg/dl and after the intervention the mean was 220.75 mg/dl with a standard deviation of 71.83. The results of this study indicate that the average respondent in the experimental group before the intervention had blood sugar levels worth 271.62 mg/dl and after the intervention had a mean blood sugar level with a value of 220.75 mg/dl.

2. Bivariate analysis

Table 4 in the experimental group conducted the Wilcoxon test found the results of data analysis obtained *p*-value 0.011 and $0.004 < (\alpha = 0.05)$. So it can conclude that there was difference in the mean sensitivity of the right and left foot before and after foot massage using APIYU.

Table 1 Distribution of respondent characteristics.

Characteristics	Total ($n = 55$)	
	N	%
Age		
36–45	20	36.4
46–55	19	34.5
56–65	13	23.6
>65	3	5.5
Gender		
Man	15	27.3
Woman	40	72.7
Education		
Primary School	8	14.5
Junior High School	19	34.5
Senior High School	26	47.3
Colfoote	2	3.6
Occupation		
House wife	36	65.5
Government employees	2	3.6
Self-employed	14	25.5
Does not work	3	5.5
Length of diabetes		
≤1 year	0	0
1–10 years	55	100
Tribe		
Malay	27	49.1
Minangese	15	27.3
Bataknese	7	12.7
Javanese	6	10.9
Total	55	100

Table 2 Mean pre-test and post-test sensitivity of the right and left foot in the experimental group.

Variables	Mean	SD	Min	Max
Right foot				
Pre-test	9.49	0.71	7	10
Post-test	9.64	0.52	8	10
Left foot				
Pre-test	9.55	0.63	8	10
Post-test	9.80	0.40	9	10

Table 3 Average blood sugar levels during pre-test and post-test respondents in experimental groups.

Variables	Mean	SD	Min	Max
Experimental groups				
Pre-test	271.62	79.43	105	454
Post-test	220.75	71.83	120	410

Table 4 Differences in sensitivity of the right foot and pre-test left foot and post-test in the experimental group.

Variables	*N*	Mean	SD	*p*-value
Right foot pre-test	55	9.49	0.71	0.011
Right foot post-test	55	9.64	0.52	
Left foot pre-test	55	9.55	0.63	0.004
Left foot post-test	55	9.80	0.40	

Table 5 Differences in pre-test and post-test blood sugar levels in experimental groups.

Variables	*N*	Mean	SD	*p*-value
Blood sugar level				
Pre-test	55	271.62	79.43	0.001
Post-test	55	220.75	71.83	

Table 5 show that the mean blood sugar levels of respondents before intervention that is 271.62 mg/dl with a SD of 79.43 and after giving the intervention a mean of 220.75 mg/dl with a SD of 71.83. The results of data analysis obtained *p*-value 0.001 < (α = 0.05). So it can be concluded that there were differences in mean blood sugar levels before and after massage using APIYU.

Discussion

1. Univariate analysis

a. Age

The most age is the respondents who are elderly (36–55 years old) as many as 20 people (36.4%). The results of this study are in accordance with the research of Hasneli found that the age of many affected by DM is age 45–60 as much as 63.3% of the total respondents.[1] Age is a natural risk factor.

b. Gender

The results showed that most respondents were women of 40 people (72.7%). The incidence of DM in women is higher than men because women physically have a greater chance of increasing BMI (Body Mass Index) than men.[5]

c. Education

The most results were high school with total 26 people (47.3%). According to the assumption of researchers, knowledge possessed by a person will also influence his attitude in making decisions to maintain health status.

d. Occupation

The majority of respondents' jobs were housewife (65.5%). Most respondents have jobs as housewife as many as 13 respondents (40.6%).[5]

e. Length of DM

All respondents suffered from DM for 1–10 years.

f. Tribe

The majority of the respondent tribes were Malay as many as 27 people (49.1%).

2. Bivariate analysis

a. Comparison of the sensitivity of the right and left foot before and after a foot massage using an APIYU in the experimental group.

The mean sensitivity of the right and left foot of the respondent before given intervention is 9.49 and 9.55 with SD of 0.71 and 0.63 and after given intervention 9.64 and 9.80 were obtained with the SD of 0.52 and 0.40. The results of data analysis obtained *p*-value 0.011 and 0.004 < (α = 0.05). So, there are differences in the mean sensitivity of the right and left feet before and after foot massage using APIYU in the experimental group.

b. Comparison of blood sugar levels before and after a foot massage using APIYU in the experimental group.

Based on the Wilcoxon test, the mean blood sugar levels of respondents before given an intervention of 271.62 mg/dl with a standard deviation of 79.43 mg/dl and after the intervention the mean value was 220.75 mg/dl with a standard deviation of 71.83. The results of data analysis obtained *p*-value 0.001 < (α = 0.05). So it can be concluded that there was a difference in the mean blood sugar levels before and after massage using APIYU in the experimental group.

Conclusions

The results revealed that the most age is the respondents in the early elderly age (46–55 years) as many as 20 people (36.4%), the sex of the most respondents is women with the number of 40 people (72.7%), the majority of them are high school educated with total of 26 people (47.3%), the majority of respondents' jobs were housewife as many as 36 people (65.5%), all respondents suffered from DM for 1–10 years, and the majority of the respondents' tribes were Malay as many as 27 people (49.1%).

The results of statistical tests for sensitivity of the right and left foots were obtained *p*-value 0.011 and 0.004 < (α = 0.05). So it can be concluded that there was a difference in the mean sensitivity of the right and left foots before and after foot massage using APIYU in the experimental group. Statistical test results using the Wilcoxon test for blood sugar levels when obtained *p*-value 0.001 < (α = 0.05). So it can be concluded that there was a difference in the mean blood sugar levels before and after massage using APIYU in the experimental group.

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Analysis of electrocardiogram recording lead II in patients with cardiovascular disease☆

Safri*, **Wan Nishfa Dewi, Erwin**

Nursing Faculty of Universitas Riau, Indonesia

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KEYWORDS
Cardiovascular disease;
Electrocardiogram (ECG);
Ischemia;
CAD;
Lead II

Abstract
Objective: Electrocardiogram (ECG) is currently considered as an important diagnostic tool to monitor and evaluate patients with cardiovascular disease. This study aims to determine and analyze ECG recording patients with cardiovascular disease and analyze the specific characteristics of ECG for each cardiovascular diseases with and without complication.
Method: This study applied descriptive study with 23 samples of outpatients with cardiovascular disease with and without complication selected using purposive sampling technique. Data collected was analyzed using descriptive analysis.
Results: This study results show that P wave is normal with a width of 0.12 s (100%) and a height of <0.3 mV (100%), the width of the QRS complex is between 0.04 and 0.12 s (91.4%), PR interval width is 0.12–0.20 s (100%), Q wave width is majority <0.04 s and Q wave depth 1/3 R (95.7%). The ST segment on the lead II recorded that 52.17% of patients have ST Elevation and very little patient was identified with wide QRS complex and abnormal Q wave.
Conclusion: Majority of patients experienced ischemia as shown by the average patients having myocardial ischemia. This could slow down the repolarization process. Some experienced ischemia as shown by the ST Elevation segment which could slow down the repolarization process. However, there were respondents who did not experience ischemia and were abnormal in ECG recording. This is likely to be influenced by several factors including proper handling at the first ischemia attack, age and patient adherence to treatment given that respondents are patients who always control to poly-outpatients.

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* Corresponding author.
E-mail address: safri@lecturer.unri.ac.id (Safri).

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Introduction

The inability of the heart to carry out its function will cause damage both physical and physiologically. This can be caused by interference from other body systems or vice versa. This situation ultimately disrupts the function and adaptation of humans as a system. This damage triggers the emergence of various diseases in the cardiovascular system.[1]

In Indonesia, cardiovascular disease has also increased. This is evidenced by the data recorded by the Harapan Kita hospital, one of the national references. So that it can represent the incidence of cardiovascular disorders in Indonesia. In 2013 the highest number admitted to the Harapan Kita hospital was Acute Coronary Syndrome as many as 3186 people where data entered through the Emergency Unit. The details are as follows: Unstable Angina Pectoris was 1206 cases; Non ST Myocardial Infarction Elevation (NSTEMI) was 719 cases; ST Myocardial Infarction Elevation (STEMI) was 896 cases; and APS was 456 cases, followed by heart failure consisting of Congestive Heart Failure (CHF) as many as 662 cases. This also included later Acute Decompensation Heart Failure (ADHF) with 1932 cases.[2]

One of the important diagnostic tests to record the heart's electrical activity is the Electrocardiogram (ECG). The electrical activity of the heart in the body can be recorded through electrodes mounted on the surface of the body. Abnormalities in the electrical layout of the heart will cause abnormalities in ECG images. Therefore, researchers are interested in identifying the description of the P wave curve, QRS complex, PR interval and ST segment in patients with cardiovascular disorders.[3]

Method

This study applied descriptive study with 23 samples of outpatients with cardiovascular disease with and without complication selected using purposive sampling technique. Data collected were analyzed using descriptive analysis. In this study ECG recording used 200 × 300 Fucuda Denshi type ECG machine.

Results

Table 1 shows that the average age of the respondents was 58.87 with a standard deviation of 11.620. The highest age was 76 years and the lowest age was 20 years. The average body height of respondents was 165.13 cm with a standard deviation of 5.371 and the highest respondent was 178 cm. The average weight of the respondent was 68.87 kg with a standard deviation of 7.307 and the heaviest respondent was 80 kg.

Table 1 Characteristics of respondents based on age, height and weight.

Variable	*N*	Mean	SD	Min–Max
Age	23	58.87	11.620	20–76
Height	23	165.13	5.371	156–178
Weight	23	68.87	7.307	55–80

Table 2 Characteristics of respondents based on gender, occupation, marital status and medical diagnosis.

Variable	Frequency		Total	
	n	%	*N*	%
Gender				
Man	17	73.9	23	100
Woman	6	26.1		
Occupation				
Government employees	11	47.8	23	100
Entrepreneur	6	26.1		
Farmer	1	4.3		
Housewife	4	17.4		
Student	1	4.3		
Marital status				
Married	21	91.3	23	100
Single	1	4.3		
Widower	1	4.3		
Medical diagnosis				
CAD	12	52.2	23	100
CHF	2	8.7		
ACS	5	21.7		
Disritmia	1	4.3		
HHD	3	13		

Table 2 shows the characteristics of respondents based on gender, occupation, marital status and medical diagnosis. In this study, 17 respondents were male (73.9%). In terms of occupation, the majority of the respondents were government Employees (11 respondents/47.8%). Based on marriage status, 21 respondents were married (91.3%). In terms of their medical diagnosis, 12 respondents (52.2%) were diagnosed with CAD (Coronary Artery Disease) and 5 respondents (21.7%) were diagnosed as with Acute Coronary Syndrome (Table 3).

The QRS complex in ECG recording showed that there were 21 respondents (91.4%) with a normal QRS complex width, and 2 respondents (8.6%) with an abnormal QRS complex. There were 22 respondents (95.7%) having the width and depth of normal Q waves, 1 respondent (4.3%) with the width and depth of the Q wave that was abnormal (pathological Q).

There were 12 respondents (52.17%) showing the ST segment elevation and 11 respondents (47.83%) did not show ST elevation segments.

Discussion

Myocardial ischemia will slow down the repolarization process, so that the ECG changes ST segments (depression) and T waves (inversions) depending on the severity of ischemia and the time to take the ECG. The specificity of ST segment changes in ischemia depends on the morphology. This study found 12 respondents who showed ST elevation, which means that some patients have suffered injury/ischemia in their heart muscle cells. However, when viewed from the

Table 3 Characteristics of respondents based on lead II electrocardiogram waves.

Variable	Frequency		Total	
	n	%	*N*	%
P wave wide				
≤0.12 s	23	100	23	100
>0.12 s	0	0		
P wave high				
≤0.3 mV	23	100	23	100
>0.3 mV	0	0		
QRS complex wide				
0.04–0.12 s	21	91.4	23	100
>0.12 s	2	8.6		
QRS complex high				
0.04–0.12 s	21	91.4	23	100
>0.12 s	2	8.6		
Q wave depth				
≤1/3 R	22	95.7	23	100
>1/3 R	1	4.3		
ST elevation segment				
There is	12	52.17	23	100
There is no	11	47.83		

results of the ECG recording, ST elevation has undergone an evolution, which means that there has been a decrease in oxygen supply to the heart muscle cell tissue for a long time. From the Q wave there was also one respondent who showed pathological Q which is also a characteristic feature of long-term infarction in patients with heart failure.

Conclusion

It can be concluded that the P wave on ECG recording of the respondents is in normal condition. Yet, if it is seen from the QRS sector, there was one abnormal respondent. Viewed from the Q wave there was one abnormal respondent. Most experienced ischemia as indicated by 12 respondents who experienced ST elevation. These are the findings of all the data in accordance with the diagnosis of respondents who are patients with cardiovascular disorders.

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An overview of physical activities among family members with risk of type 2 diabetes mellitus in Pekanbaru☆

Gamya Tri Utami*, Rismadefi Woferst, Siti Langga Lubis

Faculty of Nursing, Universitas Riau, Indonesia

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KEYWORDS
Family member;
Physical activity;
Risk of type 2 diabetes mellitus

Abstract
Objective: Genetic has interrelated with the development of type 2 diabetes mellitus (DM). Individuals at high risk of type 2 DM have a strong family history and physical inactivity in their lifestyle. This study was aimed to determine physical activity among family members with risk of type 2 DM in Pekanbaru.
Method: Design of the study was descriptive study. Number of sample were 128 respondents, which has taken by purposive sampling technique based on the inclusion criteria. This study was considered for respondent's comfort, privacy and confidentiality. The measuring tool for physical activity was modified Baecke Questionnaire, which has been tested for validity and reliability. It consists of work index, sport index, and leisure index. The analysis of this study was univariate analysis with frequency distribution in percentage form.
Results: The result showed that in adolescent age, 51.9% have middle activity, 27.8% have high activity, and 20.3% have low activity. In adult age, 61.2% have middle activity, 24.5% have low activity, and 14.3% have high activity.
Conclusion: This study recommends for family members who have risk of type 2 DM to start a healthier life by maintaining their physical activity especially in sport activities.

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* Corresponding author.
E-mail address: gt.utami@gmail.com (G.T. Utami).

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Introduction

Diabetes can become a life-threatening disease. It is one of the leading causes of frequent hospitalization and early death. It currently affect 425 million adults, a total that is set to reach 629 million by 2045.[1]

The prevalence of diabetes is increasing worldwide for the past 3 decades, In particular, the prevalence of diabetes is growing most rapidly in low and middle income countries.[2] About 346 million people worldwide have diabetes, with 80 percent of diabetes deaths occurring in low- and middle-income countries. Recent research has shown that urban populations in South Asia are increasingly at risk from developing type 2 diabetes mellitus (DM).[3]

Diabetes has devastating complications if not treated early and managed appropriately. Many with type 2 diabetes are diagnosed too late when complications are already present. This is unacceptable and needs to be addressed as a matter of urgency.[1] WHO published the Global report on diabetes in April 2016, which calls for action to reduce exposure to the known risk factors for type 2 DM and to improve access to and quality of care for people with all forms of diabetes.[2]

The causes of type 2 DM are complex. Risk factors associated with tend to cluster within a family given that its members share common genetic background, lifestyle habits, social and physical environment.[4] About 10% of people with type 2 diabetes have siblings who are also affected by the disease.[5] Some studies have shown that if you have a father, mother or sibling who has diabetes, it is 2–6 times more risky than those who do not have a family with a history of type 2 DM.[6]

A study found that statistically significant correlation between family risk history on the prevalence of type 2 DM.[7] If one parent suffers from DM, 15% of children are at risk of developing DM and 75% at risk if both parents affected by DM.[8]

The rise is due in part to increases in the number of people who are overweight, including an increase in obesity, and in a widespread lack of physical activity. Sudaryanto, Setyadi, and Frankilawati (2012) states that someone with less physical activity has 5 times the chance of developing DM disease than people who are sufficient in exercise.[9] This study was aimed to determine physical activity among family members with risk of type 2 DM in Pekanbaru.

Method

This research is a descriptive research. It was conducted in the working area of Puskesmas Harapan Raya, and starting from February to July 2018. The samples in this study were family members with high risk that having a family history with of type 2 diabetes. Number of sample were 128 respondents, which has taken by purposive sampling technique based on the inclusion criteria. This study was considered for respondent's comfort, privacy and confidentiality.

The measuring tool for physical activity was modified Baecke Questionnaire. It has been tested for validity and reliability. It consists of work index, sport index, and leisure index. Based on the total index value, the level of physical activity will be generated in the form of a category of mild activity with an index value of 56.5, moderate activity with an index value of 6.6–9.5, heavy activity with an index value >9.5.[10]

Results

A total of 79 (61.7) respondents are 17–25 years old with various of work category (Table 1).

Table 2 showed that all respondents' blood glucose in normal range, between 60 and 95 g/dL.

Table 3 showed two risk factors that we recorded. Nearly half respondents are overweight (42.2%) and more than half respondent have mother with type 2 DM.

Table 4 showed that majority respondents have middle activity in both age category (adolescent age 51.9% and adult age 61.2%).

Respondent with age category 17–25 years old have low work activity, high sport activity and high leisure activity. Respondent with age category 26–35 years old have high work activity, high sport activity and high leisure activity (Table 5).

Table 1 Respondents characteristic.

Respondents characteristic	Frequency	Percent
Age category		
17–25 years old	79	61.7
26–35 years old	49	38.3
Total	128	100
Work category		
Student	39	30.5
Entrepreneur	12	9.4
Office worker	46	35.9
Not working	29	22.7
Others	2	1.6
Total	128	100

Table 2 Respondents characteristic.

Laboratory test	Min	Max	Mean	Std. deviation
Blood glucose	60	95	70.93	6.509

Table 3 Risk factors of type 2 DM respondents.

Risk factor of type 2 DM	Frequency	Percent
Body mass index (BMI)		
Underweight	3	2.3
Normal weight	71	55.5
Overweight	54	42.2
Total	128	100
Family member with type 2 DM		
Mother	79	61.7
Father	44	34.4
Mother & father	5	3.9
Total	128	100

Table 4 Analysis statistic for physical activities.

Physical activities & age category	Low activity		Middle activity		High activity		Total	
	n	%	*n*	%	*n*	%	*n*	%
17–25 years old	16	20.3	41	51.9	22	27.8	79	100
26–35 years old	12	24.5	30	61.2	7	14.3	49	100
Total	28	21.9	71	55.5	29	22.7	128	100

Table 5 Analysis statistic for physical activities.

Index category	Activity				Total	
	Low		High			
	n	%	n	%	n	%
Work index						
17-25 years old	42	53.2	37	46.8	79	100
26-35 years old	22	44.9	27	55.1	49	100
Sport index						
17-25 years old	20	25.3	59	74.7	79	100
26-35 years old	21	42.9	28	57.1	49	100
Leisuring index						
17-25 years old	21	26.6	58	73.4	79	100
26-35 years old	16	32.7	33	67.3	49	100

Discussion

According to risk factors of type 2 DM, obesity conditions have a significant relationship with the incidence of DM, where 80–85% of patients with type 2 diabetes are overweight. Not all people who are overweight will suffer from DM, but excessive body weight can cause an impact 10–20 years later.[11]

Genetic is another risk factor for type 2 DM. Santosa, Trijayanto, and Endiyono (2017) found that someone would be more quickly affected by DM if someone had a maternal lineage and tended to be affected by DM younger if they had the lineage from the mother and father.[12] Other research also found that if one parent suffers from DM then has a risk of suffering from DM by 15%, if both parents suffer from DM increase to 75%.[13]

Type 2 DM can be prevented by doing some physical activity. Thirty minutes of moderate-intensity physical activity on most day and a healthy diet can drastically reduce the risk of developing type 2 DM.[2] Moderate aerobic physical activity $\geq$150 min/week was significantly associated with decreased risk of type 2 diabetes in all and non-obese subjects.[14] However, in obese participants physical activity did not reduce risk of type 2 DM.

The results showed majority of respondents' physical activity was in the category of middle physical activity (84.1%). The assumption was due to the age of the respondents studied being productive age where much activity is still carried out. In accordance with the theory that the school age range to the early adult physical activity of a person tends to increase until it reaches a maximum at the age of 25–30 years, then there will be a decrease in the functional capacity of the whole body approximately 0.8–1% per year.[15]

The type, intensity, and duration of beneficial physical activity associated with decreased risk of type 2 diabetes have not been clarified completely. In addition, there is controversy that whether physical activity can prevent diabetes independent of BMI and body fatness.[14] Fikasari (2012) found that people who regularly exercise in the moderate category can reduce the risk of developing type 2 DM disease by 0.442 times compared to those who are irregular or lacking.[16] The study conducted by Sukmaningsih (2014) showed that a person with low physical activity had a risk of 14,916 times compared to those with heavy physical activity on the incidence of type 2 DM.[17] The more activity was carried out the lower fasting blood sugar levels.[18]

Regular physical activity can increase insulin sensitivity and increase glucose tolerance. Other benefits of doing physical activity are being able to increase body fat metabolism, increase blood pressure stability, and weight.[19] Kurniawaty and Yanita (2013) in their study found that there was no relationship between physical activity and the risk of type 2 DM, but when associated between inactivity with obesity, hypertension, and family history of type 2 DM, results were obtained that exercise had a protective effect that could be achieved with weight reduction through increasing physical activity.[6] IDF recommends physical activity at least between three to five days a week, for a minimum of 30–45 min.[1] The Indonesian Ministry of Health (2011) recommends to carry out physical activities or exercise for at least 30 min every day with 3–5 times a week.[20]

Sports activities can provide direct benefits to blood sugar levels. The results of the research by Rondonuwu, Rompas, and Bataha (2016) found that there was a significant

relationship between sports behaviour towards statistical control of blood sugar levels.[21] Sports activities can increase the permeability of cell membranes to glucose when the muscles contract and can increase insulin sensitivity.[22]

Routine activities such as walking, cycling, 2–3 times a week for 20 min every day and reducing sitting activities can have a positive impact on blood sugar.[23] WHO (2016) also explained that blood sugar levels can be controlled by not doing sedentary activities (lack of motion) such as lingering in front of the television and lazing around.[24]

The results of leisure index found that majority respondents were doing high leisure activity. About 71.1% spent their free time watching television. Individuals who are less active are individuals who lack movement, including casual daily behaviour such as sitting, lying down, whether at work (in front of a computer, reading, etc.), at home (watching TV, playing games, etc.), but not including time sleep.

While there are a number of factors that influence the development of type 2 DM, it is evident that the most influential are lifestyle behaviours commonly associated with urbanization. These include consumption of unhealthy foods and inactive lifestyles with sedentary behaviour.[1] The lack of motion behaviour is higher in urban areas compared to rural areas, namely 49.3%.[24]

Conclusions

The results of the research were nearly half respondents are overweight, majority of respondents had mothers suffering from type 2 diabetes mellitus, and respondents' physical activity was in the category of middle physical activity. This study recommends for family members who have risk of type 2 DM to start a healthier life by maintaining their physical activity especially in sport activities and maintain their weight.

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The effectiveness of health education using audiovisual media on increasing family behavior in preventing dengue hemorrhagic fever (DHF)☆

Arneliwati*, Agrina, Ari Pristiana Dewi

Community Health Nursing Division, Nursing Faculty, Riau University, Indonesia

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KEYWORDS
Dengue Haemorragic Faver (DHF);
Attitude;
Actions

Abstract
Objective: This study aims to determine the effectiveness of health education through audiovisual media on improving family knowledge in the prevention of dengue fever (DHF).
Method: This study used a Quasi Experiment research design with a research design of Non-Equivalent Control Group. The study was conducted in the community with a sample of 40 people, consisting of 20 for experimental group and 20 for control group. The samples were selected using purposive sample collection method. The measuring instrument used is a questionnaire that has been tested for validity and reliability. The analysis was done through univariate analysis and bivariate analysis using t-independent test.
Result: This study found that the showed a significant increase in changes in the level of attitudes and actions of families in the prevention of dengue fever by using audiovisual media, ($p = 0.000$), ($p = 0.000$).
Conclusion: It is recommended that the health workers should provide health education by using audiovisual media in the prevention of dengue fever.

Introduction

Dengue Hemorrhagic Fever (DHF) is a disease caused by infection transmitted through Aedes Aegypti mosquito which is found in areas with tropical and subtropical climates. According to Vyas (2013), it occurs on islands in Indonesia to the northern part of Australia. Since before 1970 until now, DHF has become an endemic disease in more

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* Corresponding author.
E-mail address: ners_neli@yahoo.co.id (Arneliwati).

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Table 1 Respondent characteristics.

Characteristics	Experimental group ($n = 20$)		Control group ($n = 20$)	
	N	%	*N*	%
Age				
17–24 y.o	2	10	0	0
25–45 y.o	6	30	11	55
46–65 y.o	12	60	9	45
Education level				
No school	1	5	0	0
Elementary school	4	20	1	5
Junior High School	9	45	1	5
Senior High School	4	20	9	45
University	2	10	9	45
Occupation				
Housewife	16	80	9	45
Farmer	2	10	0	0
Private worker	0	0	8	40
Midwifery	0	0	1	5
Teacher	1	5	2	10
Civil servant	1	5	0	0

than 100 countries. The countries that have the highest number of dengue cases include Africa, America, Eastern Mediterranean, Southeast Asia and the Western Pacific Approximately 500,000 patients with DHF require hospitalization each year, where the proportion of people are mostly children and 25% of whom have reportedly died.[1]

DHF currently is still one of the public health problems, especially for people in Indonesia. Since 1968, DHF has spread widely throughout Indonesia (Ministry of Health, 2010). Poor environmental situation, unhealthy people behavior, the behavior in the house during the day and a population density are some other factors of the cause of DHF.[2] DHF is also one of the diseases that has a very fast process and many patients' death because of slow treatment.[3]

Community behavior has an important role in dengue transmission. The community should have adequate knowledge, positive attitudes, and good practices in preventing the DFH diseases. Positive community behavior includes efforts to drain, close, and bury action. Community behavior efforts in eradicating dengue mosquito nests have not been realized optimally because there are still many trashes that are carelessly dumped around the yard such as used cans, tires that are not used. Shells are also still found as mosquito breeding sites. Some places are possible as a place to rest and a place for mosquito breeding such as dispenser shelters and puddles outside the house such as in flower pots that will cause puddles. Mosquitoes inside and outside the house are the factors that cause high rates of dengue disease.[4]

Even though various health promotions have been done by the government to increase the behavior, preventing such a negative behavior from the community is still far from expected. The number of dengue fever patients always increase every year. For this reason, this study was done by doing health education through audiovisual media to promote the family behavior. The purpose of this study was to assess the effect of providing health education through audiovisual media for improving family behavior in the prevention of DHF disease.

Method

This study was a quasi experiment research design with non-equivalent control group, conducted from June to August 2018 in Kempas Jaya Public Health Center (PHC), Inhil District. This area is one of rural areas in Riau Province, Indonesia. There were 40 respondents (20 for experimental group and 20 for control group) consisting of families who lived in the PHC working area. They were selected using purposive sampling method. The questionnaires had been tested for validity and reliability. They consist of knowledge, attitudes, and actions regarding DHF prevention along with the family's ability to look after DHF. Data was analyzed using an independent *T* test to measure the mean differences of respondents between intervention and control group after the intervention using audio visual media.

Results

Table 1 shows that the oldest respondents in the experimental group was 45–65 years (60%) and 25–45 years (55%) for control group. In terms of educational background, most of the respondents graduated from junior high school (45%) and senior high school and university (55%). In terms of occupation, majority of respondents were housewives (80% and 45% respectively).

Table 2 shows the results of bivariate analysis with Independent *t*-test that there was no significant difference between respondents' knowledge after health education between the experimental group and the control group with *p* value 0.925 (*p* value $>\alpha$). The mean difference

Table 2 The mean difference of knowledge, attitude, and action of respondents between experimental and control group after health promotion by audio visual media.

Variable	Mean	Mean differences	SD	SE	*p* value	*N*
Knowledge after intervention						
Experimental group	6.9500	−0.05	1.53811	0.34393	0.925	20
Control group	7.0000		1.77705	0.396		20
Attitude after intervention						
Experimental group	32.1	3.55	4.66679	1.0453	0.007	20
Control group	28.55		3.05175	0.68239		20
Action after intervention						
Experimental group	6.55	3.05	1.53811	0.34393	0.000	20
Control group	3.5		2.06474	0.461		20

was −0.05 showing that the experimental group has a smaller mean than the control group. Furthermore, Table 2 shows that there was a significant difference between the attitudes and actions of respondents after health education between the experimental group and the control group with *p* value of 0.007 and 0.000. The mean difference was 3.55 and 3.05, meaning that the experimental group has a greater mean value than the control group.

Discussion

Attitudes and actions in this study indicate the mean difference between the experimental group and the control group after health education using audio visual media. Audio visual media is one of the media that presents information or messages in an audio visual manner. Audio visuals significantly contribute to changes the people's behavior, especially in the aspects of information and persuasion. This media provides a stimulus to hearing and vision, so that the results obtained are maximized. These results can be achieved because the senses that channel most of the knowledge to the brain are through eyes (approximately 75% to 87%), while 13% to 25% of knowledge is obtained or channeled through other senses.[5]

Knowledge is a result of human sense that is strongly influenced by the intensity of attention and perception of objects.[6] The knowledge can be increased by audiovisual media. The mean level of knowledge of respondents in the experimental group and the control group are 6.95 and 7.00 respectively after the intervention. There is a difference of mean knowledge of respondents, but there is no significant different (*p* value of 0.92). This result finding is contradictory to a theory by Kamil[7] who argue that the knowledge can be increased through training or counseling. This is probably due to the situation of respondents in the experimental group got less support when collecting the data after the intervention in health examination activities.

Although the difference mean of respondent's knowledge has no significant difference between experimental and control group after the intervention, the mean of attitude and actions of respondents in the prevention of DHF had a significant difference compared to the mean with the experimental and control group. The increase of the quality of attitude shows that the counseling provided can be directly accepted by the respondents. Attitude is a person's closed response to a particular stimulus or object that involves the factors of opinion and emotions in question.[6] According to,[8] attitudes can be improved through training and counseling by paying attention to their effectiveness. Davis[9] revealed that media involving more senses is more influential than written media. Notoatmodjo[6] suggests that information will be stored as much as 20% if delivered through audiovisual media and 70% if implemented in real practice. Furthermore, Maulana (2009) shows that the most transmitting knowledge to the brain is through the eyes, which is about 75% to 87%. Audiovisual media provides stimulation through the eyes and ears. The more senses stimulated, the easier the entry of information would be. The combination of information channels through the eyes (75%) and the ears (13%) will provide stimuli that are good enough to provide optimal results.

Furthermore, this study shows that the use of audiovisual media has a significant difference of mean in preventing for dengue disease in the experimental group. Providing information about health with audiovisual media is a learning process to develop the right understanding and the right actions for health. Study also supports that health promotion with audio visual media can transform in appropriate behavior to the right ones.

Conclusion

The use of audiovisual is very appropriate media to change family behavior in this study including attitudes and action to prevent the dengue disease. Through using audio visual as health promotion media, the mean attitudes and actions of respondents in this study were different after the intervention between the experimental group and the control group.

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Sociodemographic characteristics and psychosocial wellbeing of elderly with chronic illnesses who live with family at home☆

Reni Zulfitri*, Febriana Sabrian, Herlina

School of Nursing, Universitas Riau, Pekanbaru, Riau, Indonesia

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KEYWORDS
Chronic illness;
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Abstract
Objective: This study aimed to explore sociodemographic characteristics and psychosocial well-being of elderly with chronic illnesses who live with family at home.
Methods: This is a descriptive correlational study that was conducted in Pekanbaru. This study involved 85 elders that were recruited using purposive sampling technique. Data were obtained by using questionnaires.
Results: Descriptive analysis using a computer software showed that 96.5% of elderly were Muslim, 48.2% were from Minang tribe, 55.3% were female, 56.5% were married, 78.8% were low-educated, 83.5% were unemployed, and 84.7% had experience of losing a spouse, and showed that 56.5% of elderly have high psychosocial wellbeing state, which reflected psychological health and the ability to interact socially. Of all sociodemographic characteristics of the elders, all indicated higher psychosocial wellbeing state except for single elders or don't have a life partner and unemployed elders. Chi-square test showed no significant relationship between educational level, marital status, employment status, and bereavement experience with psychosocial wellbeing of the elders ($p > 0.05$).
Conclusions: The majority of the elderly with chronic illnesses who live with family at home were at good psychosocial wellbeing. Measures are needed to improve psychosocial wellbeing of single elders or don't have a life partner and unemployed elders.

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* Corresponding author.
E-mail addresses: renz_emi@yahoo.com, reni.zulfitri@gmail.com (R. Zulfitri).

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Introduction

Non-communicable chronic diseases are the main health problems that occur in the elderly in the world with a fairly high prevalence rate. More than 50% of the elderly population in the world experienced at least one type of chronic disease.[1–3] This condition also occurs in Indonesia, including in Riau Province and Pekanbaru City.[4–6]

These chronic diseases are the main cause of disability in the elderly. This greatly affects the quality of life of the elderly and is even the main cause of death of the population in the world, especially if the disease is not controlled early.[7–9] According to the authors,[9–11] health conditions and the impact of chronic diseases experienced by the elderly become one of the risk factors for increased psychosocial health problems in the elderly, such as anxiety, feeling of worthlessness, depression, despair, social isolation and loneliness, alcoholism, fear of becoming a burden for family and society, even suicidal behavior. The prevalence of depression in elderly living in the community, in hospital and in nursing homes was 10–20%, 11–45%, and 50% respectively.[8,10]

This psychosocial condition is related to psychological and social demographic conditions, such as: level of education, loss of job, marital status, loss of spouse and loved ones, and social interaction of the elderly with the surrounding environment both inside and outside the house.[8] Psychosocial conditions for the elderly, especially the elderly with chronic diseases, one of which is influenced by the existence of social support from the family. The family is the main support system for the elderly. According to the authors,[8,9] every ethnic group, family in general is the first and foremost support system for the elderly. Mahler et al.[17] explained that houses are the best place for the elderly to improve their health. Even various research results show that there is a relationship between family support for status, health condition, duration and severity of illness and death, psychological well-being, elderly healthy behavior, self-esteem and quality of life for the elderly.[12,13]

Based on this description, researchers were interested in conducting research on sociodemographic characteristics and psychosocial wellbeing of elderly people with chronic illness who live with family at home. This study aimed to explore sociodemographic characteristics and psychosocial wellbeing of elderly people with chronic illness who live with family at home.

Method

This is a descriptive correlational study that was conducted in the working area of Payung Sekaki subdistrict Public Health Center in Pekanbaru. This subdistrict had the highest elderly population compared to other Public Health Centers. This study involved 85 elders who were recruited using purposive sampling technique according to the inclusion criteria, including: elderly aged 60 years and above, having at least 1 type of chronic disease, and live with family. The data was collected through questionnaires. The data collection tool used was closed statement questionnaires compiled based on literature studies. The questionnaires consisted of questions about respondents' characteristics and social demographics including age, gender, religion, ethnicity, marital status, level of education, occupation, and experience of loss, and statements about elderly psychosocial well-being which reflected psychological condition or elderly self-concept and social interaction ability of elderly inside and outside the house. The total number of questions was 30 statements that have been tested for validity and reliability. Data analysis in this study was univariate and bivariate using computer software. Univariate analysis in the form of frequency distribution (%) and bivariate analysis using Chi Square test with p value (0.05).

Table 1 Frequency distribution of sociodemographic characteristics of elderly.

No	Characteristics of respondents	*N*	%
1.	*Age*		
	a. Elderly (60–74 y.o)	65	76.5
	b. Old (75–90 y.o)	20	23.7
2.	*Religion*		
	a. Islam	82	96.5
	b. Christian	3	3.5
3.	*Tribe*		
	a. Minang	41	48.2
	b. Jawa	17	20.2
	c. Melayu	20	23.5
	d. Batak	7	8.2
4.	*Gender*		
	a. Male	38	44.7
	b. Female	47	55.3
5.	*Marital status*		
	a. Married	48	56.5
	b. Widow	27	31.8
	c. Widower	7	8.2
	d. Not married	3	3.5
6.	*Level of education*		
	a. College graduates	7	8.2
	b. High school	11	12.9
	c. Junior school	21	24.7
	d. Elementary school	46	54.1
7.	*Occupations*		
	a. Employed	14	16.5
	b. Unemployed	71	83.5
8.	*Types of chronic diseases*		
	a. Hypertension	35	41.2
	b. Hypertension + Gout arthritis	26	30.6
	c. Hypertension + Rhematoid arthritis	11	12.9
	d. Hypertension + Diabetes	13	15.5
9.	*Kind of loss experience*		
	a. Losing family members	35	41.2
	b. Loss of property	37	43.5
	c. No experience	13	15.3

Results

1. Sociodemographic characteristics (Table 1).
2. Description of psychosocial wellbeing of elderly with chronic illnesses who live with family at home (Table 2).
3. Marital status and psychosocial wellbeing of elderly.

Table 2 Frequency distribution of psychosocial wellbeing of elderly.

No.	Psychosocial wellbeing of elderly	*N*	%
1.	Higher	48	56.5
2.	Lower	37	43.5
	Total	85	100

Table 3 Marital status and psychosocial wellbeing of elderly.

No	Marital status	Psychosocial wellbeing				Total		*p*-Value
		Higher		Lower		*n*	%	
		N	%	*N*	%			
1.	Married	30	62.5	18	37.5	48	100	0.291
2.	Un-married	18	48.6	19	51.4	37	100	
	Total	48	56.5	37	43.5	85	100	

Table 4 Level of education and psychosocial wellbeing of elderly.

No	Education	Psychosocial wellbeing				Total		*p*-Value
		Higher		Lower		*n*	%	
		N	%	*N*	%			
1.	Higher	10	55.6	8	44.4	18	100	1.00
2.	Lower	38	56.7	29	43.3	67	100	
	Total	48	56.5	37	43.5	85	100	

Table 5 Occupations of elderly and psychosocial wellbeing of elderly.

No	Occupations	Psychosocial wellbeing				Total		*p*-Value
		Higher		Lower		*n*	%	
		N	%	*N*	%			
1.	Employed	8	57.1	6	42.9	14	100	1.00
2.	Unemployed	40	42.3	31	57.7	71	100	
	Total	48	56.5	37	43.5	85	100	

Table 3 shows that there was no relationship between marital status with elderly psychosocial well-being of chronic diseases living with family (*p* value: 0.291).

4. Level education of elderly and psychosocial wellbeing of elderly.

Table 4 shows that there was no relationship between the level of education with psychosocial wellbeing of elderly (*p* value: 1.00).

5. Employment status and psychosocial wellbeing of elderly (Table 5).

Table 6 shows there was no relationship between employment status and elderly psychosocial wellbeing (*p* value: 1.00).

6. Loss experience and psychosocial wellbeing of elderly.

Table 6 shows there was no correlation between loss experience with elderly psychosocial wellbeing (*p* value: 0.481)

Discussion

Health conditions and the impact of chronic diseases experienced by the elderly become one of the risk factors for an increase in psychosocial health problems in the elderly, such as anxiety, feelings of worthlessness, depression, despair, social isolation and loneliness, alcoholism, fear of being a burden on family and society, even suicidal behavior.[9] These psychosocial conditions are related to psychological and social demographic conditions such as level of

Table 6 Loss experience and psychosocial wellbeing of elderly.

No	Loss experience	Psychosocial wellbeing				Total		*p*-Value
		Higher		Lower		*n*	%	
		N	%	*N*	%			
1.	Have experience of losing	39	54.2	33	45.8	72	100	0.481
2.	Have no experience of losing	9	69.2	4	30.8	13	100	
	Total	48	56.5	37	43.5	85	100	

education, marital status, loss of job, loss of spouse and loved ones.[8]

The results showed that all the social demographic characteristics did not have a relationship with elderly psychosocial wellbeing with p value >0.05. This was due to the elderly live with the family he loved despite having chronic illnesses. The family is the main support system for the elderly, especially for the elderly with chronic diseases. According to [14–16], the family is a natural social support system and as the main support system for all its members, especially for the elderly who experience chronic diseases.

Family as the closest person and is the most important source of support in elderly life. According to [8,9], every ethnic group, family in general is the first and foremost support system for the elderly. Mahler et al.[17] explained that houses are the best place for the elderly to improve their health. The results showed that there was a relationship between family support for status, health condition, duration and severity of illness and death, psychological well-being, elderly healthy behavior, self-esteem and quality of life for the elderly.[12,13]

Conclusions

The majority of the elderly with chronic illnesses who live with family at home were at good psychosocial wellbeing. Of all sociodemographic characteristics of the elders, all indicated higher psychosocial wellbeing state except for single elders or do not have a life partner and unemployed elders. Chi-square test showed no significant relationship between educational level, marital status, employment status, and bereavement experience with psychosocial wellbeing of the elders ($p > 0.05$). Measures are needed to improve psychosocial wellbeing of single elders or do not have a life partner and unemployed elders.

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Self-caring in Islamic culture of Muslim persons with ESRD and hemodialysis: An ethnographic study☆

Bayhakki[a,*], **Urai Hatthakit**[b], **Pleonpit Thaniwatthananon**[b]

[a] *Faculty of Nursing, Universitas Riau, Indonesia*
[b] *Faculty of Nursing, Prince of Songkla University, Thailand*

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KEYWORDS
Ethnography;
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Abstract
Objective: Culture and religion may influence self-caring of persons with End Stage Renal Disease on hemodialysis therefore the study aimed to explore self-caring in an Islamic culture of Muslim persons living with End Stage Renal Disease undergoing hemodialysis.
Method: This study is a qualitative ethnographic study. Purposive sample of 4 females and 8 males of Muslims on hemodialysis aged between 31 and 62 years old and length of undergoing hemodialysis between 11 months and 9 years 3 months were recruited by using several inclusion criteria. The inclusion criteria were being diagnosed End Stage Renal Disease and having known the diagnosis, having been undergoing hemodialysis at least 6 months, and never change treatment to peritoneal analysis or renal transplantation. Exclusion criteria applied in this study were hemodialysis persons with severe hyperventilation and edema, and loss of consciousness. Data were collected by using in-depth interviews, participant observation, and field note takings. Data analysis used the ethnonursing data analysis method.
Results: Findings of the study revealed four categories that reflect meanings of and how informants care for themselves and how Islamic teachings and cultural values influences them. The categories emerged from the study are meaning of self-caring, actions in self-caring, Islamic influences to self-caring living and cultural influences to self-caring living.
Conclusions: Muslims on hemodialysis performed any activities or actions that reflected their efforts to perform their self-caring in order to survive or be healthy based on their own perspective. Islamic teachings were used as guidance in selecting treatments and performing their self-caring. Family members, nurses and other healthcare professionals should consider Islamic teachings in assisting and delivering care for Muslims on hemodialysis.

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* Corresponding author.
E-mail address: ba_i_hq@yahoo.com (Bayhakki).

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Introduction

Hemodialysis as one of the Renal Replacement Therapies (RRT) is widely used for persons with acute or irreversible renal failure and fluid and electrolyte imbalance.[1] End Stage Renal Disease (ESRD) is one of major public health problems throughout the world. In Indonesia, there are approximately 70,000 patients diagnosed with ESRD every year and less than 5% of them undergo hemodialysis treatment.[2] As a chronic and terminal illness, ESRD affects the daily lives of patients and families as they confront changes in health status, lifestyles and roles.

Culture and religion may influence self-caring of persons with ESRD on hemodialysis. Culture is the learned, adaptive, shared ways of people with identifiable patterns, symbols, material and immaterial.[3] Furthermore, cultural beliefs, values, and meanings often guide the thought and behavior of people in diverse cultures. Experiences of living with ESRD and hemodialysis have been studied by researchers and the meanings of this are diverse and expressed in various ways, such as accepting their life conditions, struggling to survive, developing strategies to improve their quality of life, being vulnerable, having mistrust, dependence, and feeling restricted in their lives.[4–7] How persons undergoing hemodialysis treatment perform self-caring under the influence of their cultures and religions, particularly the Islamic culture are not known clearly and have not yet been studied. Research questions of this study were 'How do Muslim persons with ESRD on hemodialysis care for themselves?' and 'How does Islam and culture influence self-caring of Muslim persons with ESRD on hemodialysis?'

Method

The study was aimed to explore self-caring in an Islamic culture of Muslim persons living with ESRD undergoing hemodialysis in Pekanbaru, Indonesia. The study was an ethnographic study and employed the ethnonursing research method. Informants of this study were recruited by using purposive sampling on the basis of several inclusion criteria. The inclusion criteria have been diagnosed ESRD, have known the diagnosis, have been undergoing hemodialysis at least 6 months, Muslim, and never change treatment to peritoneal analysis or renal transplantation. Exclusion criteria applied in this study were hemodialysis persons with severe hyperventilation, severe edema, and loss of consciousness. All informants were recruited in Pekanbaru, Indonesia. Data were collected by using interview, observation, and review of available documents. In collecting and recording data, the principal author used Personal Information Form to collect baseline characteristics of informants, interview guide, observation guide, field notes, camera, and audio-tape recorder. Camera and audio-tape recorder were used to take pictures or record interviews and conversation. Each interview was recorded and transcribed verbatim. Data were analyzed by using the ethnonursing data analysis. There are four phases of the ethnonursing data analysis.[3] Trustworthiness of the study was highly maintained by employing criteria related to ethnonursing. Ethical consideration was highly maintained during the study. Ethical approval was granted by the ethics committee of the Faculty of Nursing, Prince of Songkla University, Thailand.

Results

There were 12 informants recruited for the study, 4 females and 8 males aged between 31 and 62 years old. Length of undergoing hemodialysis of all informants is between 11 months and 9 years 3 months. Characteristics of the informants are shown in Table 1. Four categories with several themes emerged from this study. The categories are as follows:

1. Meaning of self-caring

Category meaning of self-caring reflect the aims of performing self-caring of informants. Themes under this category are surviving, for my family and being healthy. Surviving was mentioned by some informants to indicate their wish to be still alive even though it was torturous to live with terminal disease and rely on the hemodialysis machine, as a female informant said ''...oh, yes, of course, because I still want to be alive...'' and another said ''I want to have a longer life, to be still alive.'' A male informant reflected that she still wanted to be alive by saying ''I do not want to die yet...'' For my family was expressed by some informants as their wish and the reason was to maintain ability to perform self-caring, as a male informant said ''I do everything for my children, I want to see their success in life'', and a female informant said ''...for my family. My children still need me.'' Being healthy reflects ability to perform any activities in their lives, as one said ''...being healthy, I can do my activities, can do anything...'' and another said ''For being healthy. If not healthy, how can you do your activities? Right? You can do nothing...'' Being healthy also reflects the value of healthy itself, as one said ''Healthy is expensive. It has high value. Being healthy is comfortable, not healthy is not comfortable'' and another said ''If you have much money but you are not healthy, you will feel your money is useless...''.

2. Actions in self-caring

Category actions in self-caring depicts activities which they did to care for themselves, what they did when they had health problem or how they dealt with problems emerged in their lives. There are six themes under this category; controlling drinking and eating, taking a rest, massaging themselves, using wheelchair, asking for family help and seeking medical treatments. Controlling drinking and eating reflect informants' effort to restrict fluid intake and reduce accumulation of toxin in their body, as one said ''...restricting drinking, eating, and everything that can make my body worse...'' and another informant said ''Controlling eating and drinking, especially drinking should be restricted''. Taking a rest was selected as one way to deal with weakness, disease, or pain of informants, as a male informant said ''...take a rest or sleep, to avoid triggering pain'' and a female informant said ''I take a rest and decrease my activities while I feel pain in my heart.'' Taking a rest was an effective way when they had weakness,

Table 1 Characteristics of the informants.

No.	Initial	Gender	Age (yo)	Marital status	Occupation	Education	Length of undergoing hemodialysis
1	EA	Female	50	Married	Civil servant	Diploma	1 year 9 months
2	R	Male	54	Married	Civil servant	Senior high school	9 years 3 months
3	S	Male	59	Married	Retired	Bachelor	2 years 2 months
4	M	Male	62	Married	Retired	Bachelor	6 years 1 month
5	H	Female	46	Married	Housewife	Diploma	5 years 2 months
6	L	Male	31	Married	Civil servant	Bachelor	2 years 8 months
7	E	Female	37	Married	Housewife	Senior high school	2 years
8	I	Male	32	Married	Entrepreneur	Senior high school	1 year 4 months
9	EF	Female	36	Married	Government officer	Bachelor	4 years 3 months
10	A	Male	49	Married	Entrepreneur	Elementary school	7 years
11	SJ	Male	56	Married	Civil servant	Bachelor	1 year
12	SH	Male	47	Married	Lawyer	Bachelor	11 months

as one said ''...taking a rest to reduce weakness''. Massaging themselves reflecting their effort to gain comfort or reduce pain, as one said ''...massaging my foot to reduce pain...'' and another informant said ''sometimes while pain occurs, I massage my foot...'' Using wheelchair was raised by some informants to ease the performance of some activities, as a male informant said ''I use wheelchair when I go outside my home or to hospital'' and another male said ''...I use wheelchair if I'm not strong enough or sometimes I do walking exercise also''.

The theme asking for family help depicts informants' way to be able to perform their activities, as one said ''When I feel weak, I ask my wife to drive, or ask her to provide meal for me'', and another said ''Asking for my wife or my children to hold me to the restroom when my left leg feel weak''. Seeking medical treatment was performed to deal with health problem that was not able to be cared for by themselves. One informant said ''Seeing a cardiologist to check my heart that sometimes feel hurt'' or ''...go to see physician to ask medication for my stomachache''.

3. Islamic influences to self-caring living

Category Islamic influences to self-caring living used to describe any influences of Islamic teachings in informants' life and their self-caring. Giving spirit, encouraging continuity of fighting, and creating serenity are themes under this category. Theme giving spirit describes effect of prayer *(shalat)* to informants, as one said ''...After prayer I feel like I have spiritual uplift. Spirit will help me to perform my activities.'' Encouraging continuity of fighting was intended to express effect of Islamic teaching to the informant in seeking proper treatment for their illness. A female informant said ''In Islam, we have to keep fighting to be healthy, to seek medication...'' and a male informant also said ''Islamic teaching makes me believe that if I select appropriate treatment, I will be healed''. Creating serenity reflects effect of Islamic activities in informants' life that influences their self-caring. An informant said ''By performing prayer, I feel peaceful, serene. There is mental tranquility'' and a female informant said ''If I cannot sleep, usually I perform *dzikir*. It makes me feel calm, peaceful...'' These effects of Islamic teaching are very useful for informants in performing their daily activities and caring for themselves, as one said ''...by listening to Islamic talk makes me feel peaceful, and Islamic teachings drive me to do any effort to deal with my problem, and I'll never give up''.

4. Cultural influences to self-caring living

Category cultural influences to self-caring living reflect influences from culture to self-caring living of informants. The influences can be shown through events, actions or activities which are based on elements in culture, such as social and traditional values. Themes under this category are support from society and adding options for treatment. Theme support from society was referred as the visit or support from social or religious group, as one said ''...religious group in the mosque came to give support to me'' and another said ''my colleagues in my office and my community came to visit me, and I was happy... Feeling happy could enhance my spirit to perform my activities''

Adding options for treatment was described by informants as how culture provides traditional therapies or treatments that are available for any illnesses and influence informants in choosing treatment for their illness. These therapies or methods are transferred inter generationally and as legacy in particular culture. One said ''my friends suggested me to take traditional therapy. Then I went to somewhere to take traditional medication called *bedah ayam* (chicken surgery). The therapist slaughtered a chicken and performed something to the dead chicken to remove illness from my body...'' Another expressed his experience in taking traditional therapy by saying ''I went to a village to meet a therapist, and the therapist massaged me and asked me to drink tamarind extract. He said that it was good for my body...'' Even though many traditional and inherited therapies available, but the evidence of these are still doubtful and even not proven, as an informant said ''I had tried many therapies from many cultures, went to many cities to take many therapies, but I got nothing. No therapy could heal my body. I still believe that hemodialysis is the only appropriate treatment for me''.

Discussion

The informants in this study performed any activities or actions that reflects their effort to maintain their physical functioning as inseparable part in self-caring, such as restrict fluid intake, control food intake, take a rest or sleep while they feel weak, use massage or wheelchair and ask for help from family members if needed. In relation to Islam, illness is believed as atonement of their sins and this is an event to cleanse and purify physical, spiritual, mental and emotional aspects of the sick body.[8] Illness is not considered as a punishment from God, but it is a way to increase patience. Islam encourages every Muslim to seek proper treatment because every disease has its remedy, as Prophet Muhammad said that there is no disease that *Allah* (God) has created, except that he also has created its remedy.[9] Islam also teaches every Muslim to maintain their health, such as eat and drink moderately, as mentioned in Qur'an that Muslims should eat and drink, but avoid excess.[10] Islam is concerned with not only physical aspect, but also psychological aspect of Muslim. Patience or *Sabar* and prayer or *Shalat* are the best way to face any problems in life, as *Allah* (God) encourage Muslim to seek Allah's help with patient perseverance and prayer.

Social support play important role in enhancing social interactions that will impact on health and well-being of the persons on hemodialysis. A study found that social support was positively correlated with physical health functioning, psychological and spirituality in Muslim on hemodialysis.[11]

Islam has guided Muslims how to view health, illness and death, how to select treatments, what should be done and prohibited in gaining care from caregivers and undergoing treatments, and other related activities.[12]

Health care professionals should be sensitive to culture and religion of persons on hemodialysis. Considering culture and religion is needed in planning and implementing care for Muslims living with ESRD on hemodialysis. Further study is needed with separated gender and age, and different setting to explore more on impact of the age and gender differences in self-caring since age and gender are considered as important factors influencing living with ESRD and hemodialysis, as well as reflect differences in strength, ability, and responding to health problems. This study is a qualitative study which is the number of informants is slight and generalization into larger setting or community is also limited. Also, informants do not represent all existing cultures in Indonesia. Studies in other cultures and settings may be required.

Conclusion

Muslims living with ESRD and hemodialysis perform any efforts to survive and maintain their self-caring. Physical and social functioning is important for Muslim persons on hemodialysis social support, including family-related social support and religiosity play an important role in enhancing their functioning and satisfaction of their life. Informants more consider Islamic teachings in selecting cultural or traditional treatments for their illness.

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Perceptions of students, lecturers and staffs on establishing a smoke-free campus☆

Febriana Sabrian*, **Wasisto Utomo**

School of Nursing, Universitas Riau, Indonesia

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KEYWORDS
Perception;
Policy;
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Abstract
Objective: The aim of this study was to identify the perception of students, lecturers and staffs on smoke-free campus policy.
Method: Samples, including 880 students, 102 lecturers and 209 staff, were taken from all faculties in Universitas Riau using convenience sampling technique. A survey was conducted for these respondents through the distribution of questionnaires. Information pertaining to demographics, smoking and non-smoking behaviors and experiences, and perceptions regarding smoke-free campus policy was obtained.
Results: It was discovered that 58% of survey groups and respondents were females, 84.3% were non-smokers, and 66.1% reported exposure to cigarette smoke in university campus every day or several days in a week. All groups reported that they were affected by cigarette smoking with no significant difference in the proportion ($p = .540$). The rate of students and lecturers were similar in terms of their agreements on smoking prohibition in campus environment (81.7% and 84.3% respectively), while it was different with staff ($p = .004$). Further ANOVA analysis revealed that there was a significant difference between groups regarding agreements on smoking prohibition ($p = .007$) such that staff differed from lecturers and students ($p = .014$ and $p = .028$), while lecturers and students showed no significant difference ($p = .502$). All groups strongly agreed on establishing a smoke-free campus (81.9% of students, 85.3% of lecturers, 77.7% of staffs) with no significant difference in their proportion ($p = .079$).
Conclusions: Interventions can be introduced to enhance support gotten from the staff group, however, majority of the students, lecturers and staffs were very supportive of creating a smoke-free campus. Therefore, there is a call to action for university leaders and decision makers to implement the policy.

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* Corresponding author.
E-mail address: fsabrian2@gmail.com (F. Sabrian).

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Introduction

Smoking behavior is popular for its negative impacts on public health. Smokes from cigarette harm almost every organ in the human body, cause a decline in overall health status and increase costs of treatment.[1,2] Moreover, it is not only harmful to the smokers, but also to people that are exposed to second-hand smoke.[2]

There is no threshold or safety limit to second-hand smoke (SHS) exposure. Even occasional exposure can lead to cardiovascular and respiratory disease as well as lung and different types of cancers.[1–3] World Health Organization suggests that the only intervention that has proved successful in protecting people from this is the implementation of a smoke-free environment.[4]

In order to achieve high compliance and strong public support, it is important for governments to enact and enforce smoke-free laws.[5] In Indonesia, there have been different regulations about smoke-free environment since 2012. Places such as health care, teaching and learning facilities, children playing areas, places of worship, public transport, workplace, and other public places should be smoke-free areas.[6]

Universities and campuses as teaching and learning facilities are all encouraged to adopt this policy. Several studies have reported that the successful implementation of smoke-free campus policy has reduced the number of active and passive smokers in campus environment.[7,8] This is because the environment discourages smokers from smoking as they used to and also helps them in making a quit attempt, therefore, increasing the rates of long term quit.[9]

Universitas Riau, a major university in Riau province, Indonesia, has not implemented smoke-free environment yet. Previous study revealed that students were not opposed to prohibition of smoking in campus area. Instead, they expect the university administrators to implement smoke-free campus policy.[10]

A follow-up study is needed to identify perceptions of other university members, including lecturers and staff as regards this policy. Therefore, this study was aimed at identifying and comparing the perceptions of students, lecturers and staffs on smoke-free campus policy.

Methods

A survey was conducted between July and October 2016 to identify the perceptions of students, lecturers and staffs regarding the establishment of a smoke-free policy in Universitas Riau. A set of questionnaires containing 18 quantitative questions was distributed throughout the university. Information pertaining to demographics, smoking and non-smoking behaviors and experiences, and perceptions regarding smoke-free campus policy was obtained.

The questionnaire was developed in accordance with a survey conducted by the University of Michigan Tobacco Research Network. The first part of the questionnaire contained demographic characteristics of the respondents including gender, affiliation to the university, and smoking status. The next four questions were to identify perceptions on passive smoking, three questions regarding attitudes toward smoke-free campus policy, and three questions to identify active smokers. The rest of the quantitative questions were targeted toward exploring different ways of receiving health information. The last part was a qualitative question to explore thoughts and perceptions of the respondents.

Approval was gotten from the Rector of the school prior to the conduct of the survey. A total of 1211 individuals including 880 students, 229 staffs and 102 lecturers agreed to participate in this study. These samples were estimated to represent 30%, 20% and 10% of total students, staffs, and lecturers respectively. They were conveniently recruited from all schools and faculties in the university.

Computer software was used to analyze data in order to obtain the frequency distribution. Chi-square and ANOVA test were both used to compare rate and explore the difference between each group in details.

Results

The results showed that 58% of all respondents were females and that 84.3% were non-smokers. Table 1 shows that majority of the students were female (63.5%), staffs were mostly male (59.8%) and there was gender balance for the representation of the lecturers. It was also discovered that the majority of the respondents from all groups were nonsmokers, just 25.8% of staffs and 19.6% of lecturers were daily smokers.

As regards experiences and perceptions on secondhand smoke, 66.1% reported exposure to cigarette smoke on the campus every day or several days in a week. Majority of the respondents (73.6%) were bothered a lot about the smoke and 61.6% experience immediate health effects such as cough and difficulty in breathing.

Table 2 shows that more lecturers and staffs got exposed to secondhand smoke; however, more students reported immediate health effects after exposure. All groups reported they were affected by cigarette smoke with no significant difference in the proportion ($p = .540$).

Table 3 shows that majority of students and lecturers agreed that smoking must be prohibited on campus (81.7% and 84.3% respectively), while there was a difference with staffs ($p = .004$). All groups strongly agreed on the establishment of a smoke-free campus (81.9% of students, 85.3% of lecturers, 77.7% of staffs) with no difference in the proportion ($p = .079$).

Further ANOVA analysis showed that there was a significant difference between the groups as regards agreements on smoking prohibition ($p = .007$). Table 4 shows that the staffs differed from lecturers and students ($p = .014$ and $p = .028$), while no significant difference was observed among lecturers and students ($p = .502$).

Discussion

The results showed that females and nonsmokers were the majority group among the respondents and that they are predictors to smoke-free policy support.[11,12] Before the implementation of the policy, smokers tend to be less supportive compare to nonsmokers.[7]

Most respondents reported frequent exposure and were being bothered about secondhand smoke in campus

Table 1 Characteristics of respondents ($n = 1211$).

Variables	Students		Staffs		Lecturers	
	N	%	*N*	%	*N*	%
Sex						
Male	321	36.5	137	59.8	51	50
Female	559	63.5	92	40.2	51	50
Smoking status						
Daily smoker	63	7.1	59	25.8	20	19.6
Occasional smoker	36	4.1	11	4.8	1	1
Nonsmoker	781	88.8	159	69.4	81	79.4

Table 2 Experiences and perceptions on secondhand smoke ($n = 1211$).

Variables	Students		Staffs		Lecturers		*p* Value
	N	%	*N*	%	*N*	%	
Exposure to secondhand smoke							.000
Daily	225	25.6	127	55.5	59	57.8	
Several days a week	314	35.7	54	23.6	21	20.6	
Several days a month	185	21.0	26	11.4	15	14.7	
Less than that/never exposed	155	17.6	22	9.6	7	6.9	
Attitudes toward secondhand smoke exposure							.000
Feeling bothered a lot	681	77.4	137	59.8	73	71.6	
A little bothered	165	18.8	69	30.1	23	22.5	
Not at all bothered	34	3.9	23	10	6	5.9	
Experience immediate health effects							.540
Yes	553	62.8	135	59	58	56.9	
No	327	37.2	94	41	44	43.1	

Table 3 Perceptions on smoking prohibition and smoke-free campus ($n = 1211$).

Variables	Students		Staff		Lecturer		*p* Value
	N	%	*N*	%	*N*	%	
Perception on smoking prohibition							.04
Strongly agree	719	81.7	174	76.0	86	84.3	
Somewhat agree	121	13.8	35	15.3	14	13.7	
Somewhat disagree	23	2.6	11	4.8	1	1	
Strongly disagree	17	1.9	9	3.9	0	0	
Perception on smoke-free campus policy							.79
Strongly agree	777	88.3	188	82.1	88	86.3	
Somewhat agree	69	7.8	26	11.4	13	12.7	
Somewhat disagree	22	2.5	9	3.9	1	1	
Strongly disagree	12	1.4	6	2.6	0	0	

environment. Evidence points to the fact that students and faculty members were most exposed to SHS in campus, and that outdoor exposure is difficult to avoid.[7] While staffs and lecturers in this study reported more exposure, more students expressed being bothered by the smoke and are more susceptible to experience immediate health effects. Since the health consequences of being a passive smoker have been widely studied and stated, a study suggested that more research should be conducted into the importance of public health issues and the harms of tobacco with regards to approval of tobacco policies.[13]

There were differences in the perceptions of three groups on smoking prohibition in campus environment. While the students and lecturers agreed to it, staffs were less likely to favor it. These findings contradict other evidence where staffs were not less receptive to smoking prohibition.[13,14] Therefore, further investigation is needed in this case.

Table 4 Group comparison on smoking prohibition in campus environment.

Group comparison		*p* Value
Students	Staff	.028
Staff	Lecturer	.014
Lecturer	Students	.502

Despite the fact that there were variations in the proportions, all the groups agreed that smoke-free campus policy should be implemented. This will help in reducing the number of active and passive smokers on the campus.[7,8,15] A study found that university members believed exposure to smoke was harmful to their health, therefore, university administrators should ensure that the campus community is protected from secondhand smoke.[16]

This current study has certain limitations. Several factors such as the reliance on self-reported instrument and non-application of random sampling could lead to potential bias. In addition, it did not also consider some demographic factors that may affect perceptions on the policy.

Conclusion

It can be concluded that the university members were not opposed to smoke-free campus policy although there might be need for interventions to enhance support from staff group. The results of this study provide a sound basis for university leaders and decision makers to implement smoke-free campus policy. A follow-up study should be carried out to explore the health effects and certain characteristics relating to the receptiveness of this policy.

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The effect of oromuscular stimulation on neonate latch score☆

Oswati Hasanah*, Riri Novayelinda, Hellena Deli

Faculty of Nursing, University of Riau, Indonesia

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KEYWORDS
Nurse;
Oromuscular therapy;
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Abstract
Objective: The aim of this study was to determine the effect of oral stimulation on breastfeeding on infants.
Method: This study uses the design of one group pre-test–post-test. The population was mature neonates aged < 14 days who were born without complications at a midwife clinic in Pekanbaru city. The sample consisted of 16 respondents. The sampling technique in this study was purposive sampling with criteria, mothers did not have breast problems and were willing to become respondents. The implementation of intervention was carried out by pre-test, 5 min oromuscular stimulation, then a 5-minute pause, then waiting for the next breastfeeding time and post-test. Breastfeeding ability is assessed with Latch score.
Results: The results of the univariate analysis showed that the majority of respondents aged 25–35 years (56.3%), the majority were housewife (87.5%), more than half were multiparous (62.5%) and most of the neonates were male (68.8%). The mean of Latch score before the intervention was 7.3 points and after intervention was 9.3 points. The results with the Wilcoxon test showed an increase in the ability of breastfeeding after an intervention of 2 point (*p*-value = 0.001).
Conclusion: Oromuscular stimulation can be suggested as an alternative therapy to improve breastfeeding ability in neonates.

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* Corresponding author.
E-mail address: unni_08@yahoo.com (O. Hasanah).

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Introduction

Parenteral nutrition for the neonate is needed to fulfill the nutritional status of the baby. The requirement for giving oral nutrition to a baby is that the baby has a good suction reflex. Neonates often experience impaired fulfillment of nutritional needs because facial and mouth muscles have not developed, so a stimulation is needed that can stimulate adequate suction reflexes.[1–3] Giving oral stimulation has an effect on the suckling process in the neonate. Oral stimulation is defined as a sensory stimulation of the lips, jaw, tongue, palate, pharynx, larynx and respiratory muscles which has an influence on oropharyngeal physiological mechanisms to improve its function.[4]

Several studies have shown the benefits of giving oral stimulation to the breastfeeding process in premature babies. Based on research conducted by Fucile et al.[5] in infants who performed oral stimulation at 10 days after birth showed that there was an increase in the ability to suck children within 48 h after stimulation. Research conducted by Boiron et al.,[6] found that administration of oral stimulation for 12 min every day showed an increase in suction reflexes, in addition the amount of daily milk consumption increased compared to the control group. This study was supported by research conducted by Hwang et al.,[7] where there was a significant increase in the ability to feed infants in the first 5 min of stimulation. While the results of research conducted by Fucile[5] that there is an effect of the provision of oral stimulation on the development of sucking ability, increased digestion and the potential to reduce the length of hospital treatment after being given perioral and intraoral stimulation for 10 min every day.

The oral stimulation program used in this study is a combination of massage stroking and tapping techniques on oromuscular muscles and oral structure stimulation.[5] This oral stimulation program consists of stimulation of the perioral structures such as the bottom of the nose, lips, cheeks, chin, and lips and stroking in the intraoral structure such as gums, inner cheeks, tongue and palate for 10 min every day for 5 days.

Method

The study was conducted in two midwife clinics in Pekanbaru, Riau Province of Indonesia. The data collection was conducted from August to October 2018. The design used in this study was quasi experimental with one group pre-test–post-test. The population in this study was all neonates aged < 14 days of normal birth without complications. Respondents were selected by purposive sampling technique with inclusion criteria permitted by parents and exclusion criteria were the mother with breast problems. The study was conducted on 20 respondents who had met the research criteria.

Data collection was carried out using an observation sheet, on the observation sheet monitoring of sucking ability using the SCORE LATCH. Assessment of sucking ability (pre-test) is carried out before performing oral stimulation. After that, 1 session of oral stimulation was carried out for 5 min. Stimulation sessions are carried out in clinics or at home. Oral stimulation is done by giving a light massage to the muscles around the mouth to stimulate the nerves and muscles in the oromuscular area. Massage begins from the area around the nose, ending in the area of the baby's jaw. After therapy, a 5-minute pause was given to wait for the next breastfeeding session and the mother was asked to breastfeed her baby again and then reassessed using a LATCH SCORE (post-test). Data from the results of this study were analyzed using univariate and bivariate tests. Bivariate tests are carried out using frequency tabulation, namely the data on infant gender, gestational age, body weight and the ability to suck. While the bivariate test was carried out by dependent *T* test on the variable oromuscular stimulation and the ability to suck the baby, but because the data were not normally distributed, alternative tests were carried out.

Result

Data of respondent characteristics obtained in this study were maternal age, maternal occupation, maternal labor status and sex of the child. Can be seen in Table 1.

Statistical data shows that the majority of mothers are 25–35 years old (56.3%), most mothers are house wife (87.5%), most mothers are multigrafida (62.5%) and most babies are being a respondent is male (68.8%).

The study was conducted in one group and assessed LATCH scores before and after stimulation. Table 2 shows the LATCH scores before and after therapy.

The average value (median) of the LATCH score before stimulation was 7.33 points, while the average value after stimulation was 9.31 points. Based on the results of further statistical tests on LATCH scores before and after therapy showed that oral stimulation was effective for increasing the score of breastfeeding, as shown in Table 3.

Table 1 Characteristics of respondents.

No	Characteristics responden	*N*	%
1	*Age of mother (year)*		
	a. <25	6	37.5
	b. 25–35	9	56.3
	c. >35	1	6.3
2	*Mother's work*		
	a. House wife	14	87.5
	b. Employee	2	12.5
3	*Labor status*		
	a. Primigravida	6	37.5
	b. Multigravida	10	62.5
4	*Child gender*		
	a. Male	11	68.8
	b. Female	5	31.3

Table 2 Infant LATCH scores before and after stimulation.

Period	Median	Minimum	Max
Pre	7.33	2	9
Post	9.31	5	10

Table 3 Effect of oral stimulation on infant LATCH scores.

Period	Median	*p* value
Pre	7.33	0.000
Post	9.5	

Oral stimulation has been shown to be effective in increasing LATCH scores, with an increase of 2 points with (*p*-value 0.000).

Discussion

More than half of the mothers of all respondents studied were mostly aged 25–35 years (56.3%). This age is still a productive age for people in Indonesia in general. At this age the peak condition of maternal health is to give birth and care for children, and is the ideal for reproductive age. In this study there are still mothers under the age of 25 years and over 35 years, but generally mothers of respondents do not have serious health problems because they have been taken according to the desired criteria. In this study, the majority of mothers were house wife mother (87.5%). This condition is due to the fact that the place of data collection in both midwife clinics is indeed a suburb of Pekanbaru with the average middle class and lower class, and the head of the family working as a farmer and laborer. So that most mothers are housewives who do not participate in helping her husband increase the husband's income outside the home. Data obtained by most of the mothers was multigrafida (62.5%). In the conditions of multiparous births and mothers still in productive age, usually mothers still tend to be cooperative with nursing actions.

Based on the scoring results before and after therapy, the median LATCH score before therapy was 7.33 points, while the median value after therapy was 9.31 points. The LATCH score is obtained from the accumulation of scoring based on aspects: latch, audible swallowing, tip of nipple, comfort and hold. Research shows 19.2% neonates born were having fair sucking reflex.[8] Oral stimulation in the neonate can stimulate the maturation of the motor sensory system in the oromuscular area for sucking and the breastfeeding process.[8] Stimulation in the oromuscular in neonatal preterm has been shown to shorten the transition period of oral feeding to full oral feeding, and increase feeding efficiency.[3]

Conclusion

Based on the results of further statistical tests on LATCH scores before and after therapy in this research showed that oral stimulation was effective for increasing the baby's breastfeeding score by 2 points (*p*-value 0.000). Based on the results of this study, oral stimulation in term neonates can be recommended as independent therapy by nurses to improve LATCH scores in neonates in the first 2 weeks after birth.

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Does exclusive breastfeeding correlate with infant's early language milestone?☆

Riri Novayelinda*, **Nafia Rahmadhani**, **Oswati Hasanah**

School of Nursing, University of Riau, Indonesia

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KEYWORDS
Breastfeeding;
Early language development;
ELM Scale 2;
Infant

Abstract
Objective: This study aims to assess the correlation between the exclusive breastfeeding status with infant's early language milestone.
Method: The design of this study is the correlational study with cross sectional method. This study examined 57 infants who lived around Harapan Raya Community Health Center Pekanbaru. The age of the infants was 6 months old during the data collection. The breastfeeding status was examined by using the questionnaire. The infants early language development was assessed by using the questionnaire which was modified from ELM Scale 2 (Early Language Milestone Scale 2). The data was analyzed by using the chi square or Fisher exact test to assess the correlation of exclusive breastfeeding status with each milestone on the 6 months infants language development.
Results: The study found that exclusive breastfeeding status has correlated significantly with two language milestones which are Auditory Expressive 6 (AE 6) the infant ability to produce mono babbling (0.044) and Auditory Receptive 6 (AR 6) the infant inhibit to 'no' (0.011).
Conclusions: This study found that exclusive breastfeeding has a correlation in infant language milestone. However due to small sampling size, further study needed to be done to assess the effect of breastfeeding for infants with the bigger scale of population.

Introduction

Breastmilk is the ultimate food for infant. It contains fatty acid, amino acid lactose and water in the ideal amount for infants brain development. It is also contain a high level of docosahexaenoic acid (DHA; 22:6 n-3) and a major form of n-3 long-chain polyunsaturated fatty acids

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* Corresponding author.
E-mail address: rhi79no@gmail.com (R. Novayelinda).

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(LC-PUFAs) which play an important role on neurotransmission and neurodevelopment.[1]

There are many benefits of breastfeeding for children. Breastfeeding can prevent many infectious diseases such as respiratory tract and ear infection, gastrointestinal tract infection and enterocolitis. It is also reduce the allergic incidence and the number of infant mortality. Moreover, infants who received the breastmilk experienced fewer incidence of chronic disease such as Diabetes Melitus, Leukemia and Obesity.[2]

Breastfeeding also gives positives outcome for children development. Breastfeeding for more than 4 months has been identified to have positive impacts on toddler fine motoric skill.[3] Another cross sectional study about breastfeeding suggests that breastfeeding may prevent the speech and motoric delay on young children.[4]

Among the benefits of breastfeeding to the children early life development such as language and motor skill, the number study specifically assessed about the effect of breastfeeding to language development on early life is still limited. This study aims to assess the correlation between exclusive breastfeeding to infants early development milestone. More over this study will try to assess about the correlation between breastfeeding to each aspect of language development among infant.

Method

This study is a correlational study with cross sectional method. The sample was identified during the infants visit on Posyandu activity in Harapan Raya Community health center area of Pekanbaru. The sample of this study is 6 months old infants who attend the Posyandu for immunization.

The infant breastfeeding status were assessed by asking the mother whether they breastfeed exclusively or not. The latter is determined by mother response regarding how long her breastfed their children exclusively. Mothers who breastfed their infants exclusively for 6 months were categorized into exclusive breastfeeding group while the rest were categorized as non-exclusive breastfeeding group.

The infant language development was assessed by using *ELM Scale 2* (*Early Language Milestone Scale 2*). There were 8 aspects of language skill assessed for 6 months infants including 4 aspects of auditory expressive skill, 2 aspects of auditory receptive skill and 2 aspects of visual skill. Each of language skill was analyzed separately by using chi square or Fisher exact analysis.

Result

The number of infants involved in this study is 57 infants. There were more number of male infants in this study as well as the exclusive breastfeeding infants. Majority of the mother were in reproductive age during the data collection. Majority of mother who were involved on this study were high school graduated (Table 1).

The infant language development was assessed by using ELM Scale 2. Table 2 shows that the exclusive breastfeeding infant has more percentage on language development almost on all aspects. All of the breastfeeding infants can pass the raspberry section compare to non-breastfeeding infant. However only the ability of producing polysyllabic babble correlates statistically significant to exclusive breastfeeding status (*p*-value 0.044).

Table 1 Characteristics of the study sample.

No.	Characteristics	(*n*)	(%)
1.	*Infant gender*		
	Male	34	59.6
	Female	23	40.4
2.	*Exclusive breastfeeding*		
	Yes	36	63.2
	No	21	36.8
3.	*Maternal age*		
	17–25	20	35.1
	26–35	33	57
	36–45	4	7.0
4.	*Maternal level of education*		
	Less than High School	15	28.3
	High School	26	45.6
	More than High School	16	28.1
Total		57	100.0

The number of infants involved in this study is 57 infants. There were more number of male infants in this study as well as the exclusive breastfeeding infants. Majority of the mother were in reproductive age during the data collection. Majority of mother who were involved on this study were high school graduated.

The infant language development was assessed by using ELM Scale 2. Table 2 shows that the exclusive breastfeeding infant has more percentage on language development almost on all aspects. All of the breastfeeding infants can pass the raspberry section compare to non-breastfeeding infant. The assessments of language development were assessed in three areas. The auditory expressive, auditory receptive and visual aspects. In the auditory expressive (AE) only AE 4 the ability of producing polysyllabic babble correlates statistically significant to exclusive breastfeeding status (*p*-value 0.044). In the auditory receptive (AR) aspects, exclusive breastfeeding status has significant correlation on AR 6 the ability inhibits to 'No' (*p*-value 0.011). This result shows that exclusive breastfeeding status has correlation with some aspects on early language infant development especially in the advance level. However it does not have correlation with the lower section of early language development.

Discussion

Language is important development on infant early life. Non-verbal communication developed well in the early life. The quality of reciprocal interactions between infant and caregiver is common type communication between caregiver and infant. The interactions started by making *cooing* and reciprocal vocal play between parent and child. This interaction started at 2 months. By age of 6–10 month children begin to produce babbling sound which adds consonants to vowels The increasing of the oral muscular control

Table 2 The infants language development.

No.	Language development	Exclusive breastfeeding	Non-exclusive breastfeeding	*p*-value
1	Raspberry (AE 4)	36 (100%)	20 (95.2%)	0.368*
2	Mono babble (AE 5)	28 (77.8%)	12 (57.1%)	0.100
3	Polysyllabic babble (AE 6)	12 (33.3%)	2 (9.5%)	0.044
4	Mama/Dada; any (AE 7)	8 (22.2%)	3 (14.3%)	0.729*
5	Bell (AR 5)	34 (94.4%)	16 (76.2%)	0.088*
6	Inhibits to 'No'; (AR 6)	15 (41.7%)	2 (9.5%)	0.011
7	Imitation gesture games (V7)	29 (80.6%)	17 (81.0%)	1.000*
8	1 step communication and gesture (V80)	3 (8.3%)	4 (19.0%)	0.404*

* were analyzed by using Fisher Exact Score.

facilitates the infants to make repetitive sounds such as ''da-dada-da''. Receptive language usually develops more rapidly than expressive language. Word comprehension begins to increase at age 9 months.[5]

This study found that exclusive breastfeeding infants have more percentage on the ability of receptive and expressive language compare to the non-breastfeeding infants. A cross sectional study found that the length of breastfeeding has positive impact in preventing the speech delay on infant.[4] Breastfeeding has been associated with neurodevelopmental advantage. It has been believed that the long chain polyunsaturated fatty acid (LCPUFA) has positive advantage on infant motor development.[6]

Apart from the physiologic benefit of breastmilk, the psychological benefit of breastfeeding also contributes to the infant early language development. The mother–infant interaction during breastfeeding promotes bonding and stimulation which beneficial for infant limbic system and the cortical connection.[1]

The process of early development of speech and language begins with the reflex mechanism as a basic stimulation for brain maturation, including primitive reflexes or long life reflexes which over time will disappear with increasing age.[7] Reflex movement is a special ability possessed by babies from birth in the form of spontaneous movements that are active. Reflect rooting is the initial process of breastfeeding where the baby looks for the nipple, which is then followed by swallowing reflecting and reflecting. These reflexes arise during breastfeeding.[8] The effect of breastfeeding is very influential on the development of children's speech abilities. Reflexes suck and swallow involving sound-forming muscles and play an important role in the development of speech and language skills.[9]

Several limitations need to be taken into account. This study has not consider the length of exclusive breastfeeding duration into account. The correlation only made into two basis exclusive breastfeeding group and non-exclusive breastfeeding group without considering the pre dominant breastfeeding group. The language assessment only performed at a single time at Posyandu that might be affected the result.

Conclusions

This study found that exclusive breastfeeding has a correlation in infant language milestone. However due to small sampling size, further study needed to be done to assess the effect of breastfeeding for infants with the bigger scale of population.

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Increasing mothers' knowledge of cervical cancer risk through peer group health education with ''PinKa'' method☆

Sri Utami*, **Wice Purwani**

Faculty of Nursing, University of Riau, Indonesia

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KEYWORDS
Cervical cancer;
Health education;
Mother;
Peer group

Abstract The purpose of this research is to find out the effect of peer group health education in attempt to increase mothers' knowledge of cervical cancer Risk. Quasi experimental design with non-equivalent control group was used as the design of this study. A total of 128 mothers at risk of developing cervical cancer from Surya Indah and Beringin Indah Pangkalan Kuras, Pelalawan were chosen as samples using stratified random sampling technique. The results of this study showed a score increase up to 40.70% with p value 0.0000 ($p < 0.05$) in the experimental group after the group received health education with ''PinKa'' method. The conclusion is that a health education increases mothers' knowledge about cervical cancer. Therefore, health education about cervical cancer is recommended to improve the awareness of cervical cancer so that cervical cancer can be detected earlier and its risks can be minimized.

Introduction

Cervical cancer is a disease characterized by the growth and spread of an abnormal tissue that expands in the cervix and may infect other organs which may ultimately result in death.[1]

In Indonesia, about 90–100 cases of cervical disease is found per 100,000 population, where 200,000 new cases are found each year.[1] Riau Province in 2015 had the highest rate of cervical cancer (10%), precisely in the Pelalawan area (Riau Health Profile, 2015).[2]

In attempt to prevent cervical cancer, Indonesian government has launched a program in all regions of Indonesia telling every woman who is actively having sexual intercourse to visit hospital at least once a year for early detection of cervical cancer, either by IVA and Pap Smear.

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* Corresponding author.
E-mail address: t4m1_psik@yahoo.co.id (S. Utami).

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Table 1 Respondents' characteristics.

Characteristics	Experiment (*n* = 64)		Control (*n* = 64)		Total (*n* = 128)		*p*
	N	%	*N*	%	*N*	%	
Age							
26–35 Early adult	9	14.1	2	3.1	11	8.6	0.081
36–45 Late adult	39	60.9	46	71.9	85	66.4	
46–55 Early elderly	16	25.0	16	25.0	32	25.0	
Religion							
Islam	61	95.3	61	95.3	122	95.3	1.000
Christian	3	4.7	3	4.7	6	4.7	

The program is implemented on the ground that married women have higher possibility of contracting cervical disease since their reproductive organs are increasingly exposed to male genitals and are thus at high risk of infection if they are not kept clean and healthy.

Thus, the researchers aspire to improve mothers' knowledge of the risk of cervical cancer with the ''PinKa'' method with the hope that they are more aware and exposed to critical information about cervical cancer: its definition, causes, signs and symptoms, prevention and management of mothers with cervical cancer. The researchers decided to give out the mothers a smart book on cervical cancer ''PinKa Book'' to improve their understanding of this issue. Afterwards, the extent to which the mothers have comprehended the given material is assessed. Researchers believe that the method allows them to learn more about cervical cancer: how to detect cervical cancer at the early stages and how to prevent it properly that the mortality rate is expected to decline.

The results of the research in Pelalawan village (2016) show that the mothers who exhibit positive cancerous dysplasia accounted for 30.3%, the suspects of cervical cancer 8.6%, the IVA negative 52.6%, and the inflammation 8.6%.[3]

Lastly, the results of the research in Padang Mutung village (2016) show that the mothers who exhibit positive cancerous dysplasia accounted for 26.3%, the suspects of cervical cancer 6.6%, the IVA negative 52.6%, and the inflammation 8.6%.[4]

From the survey conducted on February 5, 2018 in Mekar Sari village KM 2, Bandar Sei Kijang (Pelalawan District), it was found that only 12 mothers out of 47 interviewees from a *Wirid Yasin* club, a small local religious community, know of cervical cancer. Based on the empirical data and theoretical basis as well as the problems found in the field,[5] the researchers are interested in conducting research on increasing mothers' awareness of cervical cancer risk through peer group health education with ''PinKa'' method.

Research method

This study employed *the Quasi Experiment* method (*the Non-Equivalent with Control Group*) involving the experimental group and the control group. The samples of the study were 128 mothers at risk of cervical cancer in Surya Indah and Beringin Indah Pangkalan Kuras Pelalawan, with 64 respondents in each place.

Table 2 The average pre-test knowledge score of the mothers in the experimental group and the control group.

Variable	*N*	Mean	SD	Min	Max	*p*
Experiment	64	56.50	10.540	37	79	
Control	64	53.78	9.164	37	79	0.205

Table 3 The average post-test knowledge score of the experimental group (with ''PinKa'' method) and the control group.

Variable	*N*	Mean	SD	Min	Max
Experiment	64	97.20	3.747	90	100
Control	64	54.69	8.929	37	84

Results

1. Univariate analysis

Table 1 shows that 66.4% respondents are 36–45 years old (late adult phase), and 95.3% follow Islamic way of life, both from the experimental group and the control group. After doing the statistical test, it was found that the *p* value for age was 0.081 and for religion 1000, which is greater than the alpha value ($p > 0.05$).

Table 2 shows that the average pre-test score of respondents' knowledge in the experimental group was 56.50 with the lowest score 37 (insufficient), the highest score 79 (good), and a standard deviation of 10,540. On the other hand, the average pre-test score in the control group was 53.78 with the lowest score 37 (insufficient), the highest score 79 (good), and a standard deviation of 9.164. The *p* value after statistical test was 0.205 ($p > 0.05$), showing that the average score of the mothers before given health education was generally homogeneous.

Table 3 shows that the average post-test score of the experimental group was 97.20 (good) with the lowest score 90, the highest score 100 (good), and a standard deviation of 3.747. On the other hand, the score in the control group was 54.69 with the lowest score 37 (insufficient), the highest score 84 (good), and a standard deviation of 8.929.

Table 4 The comparison of scores of the experimental group before and after the health education with ''PinKa'' method.

Variable	Mean	Mean change	SD	*p*
Before	56.50	40.70	10.540	
After	97.20		3.747	0.000

Table 5 The comparison of scores of the control group before and after the health education with ''PinKa'' method.

Variable	Mean	Mean change	SD	*p*
Before	53.78	0.910	9.164	
After	54.69		8.929	0.420

Table 6 Mann–Whitney test in the experimental group (after given health education) and control group (without health education).

Variable	*N*	Mean	SD	*p*
Experiment	64	97.20	3.747	
Control	64	54.69	8.929	0.000

2. Bivariate analysis

Table 4 shows that the mean score before the application of health education was 56.50 with a standard deviation of 10,540, while that after the education was 97.20 with a standard deviation of 3.747. Thus, the mean change between the two was 40.70 (with *p* value = 0.0000, *alpha* 0.05). This major score change signifies the power of the health education with ''PinKa'' method.

Table 5 shows that the mean score before the application of health education was 53.78 with a standard deviation of 9.164, while the group score without the education was 54.69 with a standard deviation of 8.929. Thus, the mean change between the two was 0.910 with *p* value = 0.420, *alpha* 0.05), resulting in Ho being rejected. This minor change indicated that the mothers did not have better understanding of cervical cancer when they were not given health education.

Table 6 shows the results of the Mann–Whitney test. It was found that the pre-test mean of score in the experimental group was 97.20 with a standard deviation of 3747. In contrast, the score in the control group was 54.69 with a standard deviation of 8.929. After the statistical test, the *p* value equals 0.000, which was smaller than the *alpha* value ($p < 0.05$).

The results of this study showed that the knowledge score of mothers before being given health education was 56.50 (sufficient) in the experimental group and 53.78 (insufficient) in the control group, The score after the implementation of health education in the experimental group was 97.20 (good), while that of control group who did not receive any education was 54.69 (insufficient). The conclusion to take from these findings is that health education has significant impact on improving mothers' awareness of cervical cancer in the experimental group.

Discussion

Respondents' characteristics

1. Age

The research conducted in Surya Indah and Beringin Indah Pangkalan Kuras Pelalawan found that most mothers were 36–45 years old (late adult phase) who remained sexually active. This is in line with a statement from WHO (2017)[6] that health education to increase knowledge of the risk of cervical cancer by ''PinKa'' method is often prioritized for the right mothers aged 36–45 years or those in their late adulthood during which it is vital that the mothers constantly maintain the hygiene of, and regularly check, their genital health to identify symptoms, if any, of cervical cancer.

2. Religion

With regard to religion, the majority of respondents (95.3%) are Muslim.

Using Wilcoxon test on the experimental group, the researchers found that the average score of individuals in the experimental group before the realization of health education was 56.50, and it increased to 97.20 (with a *p* value of 0.000) after the completion of health education in the same group.

This considerable upward score change between pre-test and post-test means clearly explains that the peer group health education with the ''PinKa'' method taught to the mothers could translate into substantial understanding of cervical cancer.

On the other hand, the results of Wilcoxon test to the control group not receiving any health education showed that the respondents scored an average of 53.78% (pre-test) and 54.69% (post-test), while the *p* value was 0.420 ($p > 0.05$). These numbers suggest that there was slight progress in terms of knowledge regarding cervical cancer in the pre-test and post-test when no health education was given. In the control group, there was also minor increase as no educational intervention was given (average score 0.91).

Meanwhile, the results using *Mann–Whitney* test showed that the post-test score in the experimental group was 97.20 and the control group 54.69 with the *p* value 0.000 ($p < 0.05$). This study concluded that the peer group health education with the ''PinKa'' method is able to enhance the knowledge of mothers about cervical cancer that they are expected to know what, how to prevent, and ways to deal with, the deadly infection of cervical cancer that threatens life.

Conclusion

The results of Wilcoxon test on the experimental group showed that the *p* value was 0.000 ($p < 0.05$), meaning that there was significant score difference between the pre-test and post-test. This demonstrated the power of the peer group health education with the ''PinKa'' method to enhance the knowledge of reproductive health. Moreover, the results of *Mann–Whitney* test in both the experimental group (receiving health education) and the control group

(not receiving health education) also resulted in the p value 0.00 ($p < 0.05$). This proves there is a significant difference between the mothers' knowledge before and after the realization of health education in the experimental group with the p value $< \alpha$.

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A qualitative study: The promotion of exclusive breastfeeding (EBF) by integrated service post (ISP) cadres in suburban city☆

Widia Lestari[a,*], **Hari Kusnanto**[b], **Ira Paramastri**[b], **Widyawati**[b]

[a] *School of Nursing, University of Riau, Indonesia*
[b] *School of Medicine, University of Gajah Mada, Indonesia*

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KEYWORDS
Integrated service post (ISP) cadre;
Exclusive breastfeeding promotion;
Community health center

Abstract
Objective: This study aims to explore EBF promotion activities that have been carried out by ISP cadres during this time in the work area of the CHC in Rumbai Pesisir Pekanbaru Riau.
Method: The design of this study is a qualitative method with a phenomenological approach. Respondents in this study were ISP cadres with the determination of respondents using a purposive sampling approach, in order to obtain 11 respondents who appropriate the inclusion criteria as follows: cadres who are active in promoting exclusive EBF, cooperatives, aged ≤ 55 years, become a cadre for at least 2 years. Data collection methods in this study are through focus group discussion (FGD). Data processing from the FGD were analyzed according to the Colaizzi method.
Results: The results of the data analysis found five themes, namely: (1) Types of EBF promotion activities carried out by cadres, (2) cadre behavior in EBF promotions, (3) cadres' ability to promote EBF, (4) constraints in carrying out EBF promotions, (5) the need for cadres to improve the ability of EBF promotions.
Conclusion: Needs for EBF promotion training and cadre guidebooks, guidance and supervision by community health centers (CHC) in the implementation of this EBF promotion.

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* Corresponding author.
E-mail address: widia_1996@yahoo.com (W. Lestari).

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Introduction

ISP is one form of community-sourced health efforts that is managed from, by, for, and with the community, to empower the community and provide convenience to the community in obtaining basic health services.[1] In its implementation, ISP activities are carried out by ISP cadres. ISP cadres are members of the local community who are selected from and by the community, willing and able to work together in various voluntary community activities.[2]

The results of preliminary interviews with several ISP cadres in the working area of the Rumbai Pesisir CHC regarding EBF showed that many mothers had provided food or drinks other than breast milk before the baby was six months old. Even though counseling activities on EBF have been carried out at the ISP. In addition, some ISP cadres felt that the EBF promotion activities that had been carried out were not maximal.

Method

This study uses a qualitative method with a phenomenological approach, descriptive, which is in accordance with the objectives of determining participants, using a purposive sampling approach, with inclusion criteria: active ISP cadres, ISP cadres who have served at least two years, ISP cadres aged $\leq$ 55 years. So based on the established inclusion criteria, 11 participants were obtained from the ISP cadre. The method of data collection is through focus group discussion (FGD). Data in the form of FGDs were analyzed according to the Colaizzi method.[3]

Results

The results of qualitative data analysis in the FGD found five main themes, namely:

1. Types of exclusive breastfeeding promotion activities carried out by ISP cadres

This type of activity is in the form of providing information about the meaning and benefits of EBF, inviting, reminding and also recommending giving EBF and helping as much as possible if the mother has a problem breastfeeding. As explained by the ISP cadre below:

> *''Until now . . . only explained about EBF . . . like counseling, ma'am. We also always suggest and remind mothers to give EBF''* (FGD: P2).

2. Cadre behavior in EBF

Cadres are more focused on promoting exclusive breastfeeding at ISP so that they do not involve the family, if there are a lot of activities at the ISP, the promotion of EBF is not done so that it has not been done routinely, it has not become a priority activity compared to other activities at the EBF. As stated by the ISP cadre below:

> *''We only provide counseling in ISP, ma'am, . . . but if there are pregnant and lactating mothers who come to visit, so . . . can not be routinely done''* (FGD: P6).

3. The ability of cadres to carry out EBF promotions

The ability of cadres is still lacking, both knowledge and skills. As a result, the cadres find it difficult to convince mothers and overcome breastfeeding problems found at the ISP. As explained by the ISP cadre below:

> *''I feel that my knowledge about EBF promotion is still very lacking . . . even I am still confused, what should we do for this EBF promotion . . . apart from explaining about EBF''* (FGD: P1).

4. Constraints in carrying out exclusive breastfeeding promotions

(1) Families do not support

Families (grandmothers and husbands) are still not convinced that breast milk is enough for babies up to 6 months of age, so recommend giving formula milk and other additional foods. As stated by several participants below:

> *''Sometimes her mother wants to give EBF, but the grandmother and her husband told her to give formula milk . . . the reason is mother's breast milk is lacking''* (FGD: P8).

(2) There are health workers who have not supported.

Some health workers at health facilities such as maternity clinics and hospitals, provide formula milk to newborns. There are several reasons, because the baby is cared for in a separate baby's room with the mother and the mother's milk has not come out. As explained by several participants below:

> *''My neighbor gave birth in the midwife's clinic, the baby was given formula milk by the midwife because the mother's milk had not come out''* (FGD: P3).

5. Needs for cadres to improve the ability of EBF promotions

(1) Training and guidebooks

Cadres have never received EBF promotion training specifically and also do not have a guidebook in giving promotions to the community. As explained by several participants below:

> *''We want to get this EBF promotion special training... so we can to be better. We also don't have a guidebook yet''* (FGD: P10).

(2) Coaching, supervision and evaluation

So far there has been no guidance, supervision and evaluation of activities by the CHC employee. As explained above, the ISP cadres are described below:

> *''CHC staff should provide guidance and supervision to us in this EBF promotion, ma'am''* (D: P1).

Discussion

The themes produced will be discussed one by one below:

1. Types of EBF promotion activities carried out by ISP cadres

The counseling activities carried out by these cadres are in accordance with one of the main activities in the ISP, namely providing counseling conducted at table 4 at the ISP.[2] However, this EBF promotion activity is still not in accordance with the goals and strategies of health promotion. The goals of health promotion are: program objectives, educational goals, behavioral goals, and goals of behavioral interventions in health promotion.[4] While the strategies of health promotion are: (1) Advocacy, (2) social support, (3) community empowerment.[5]

2. Cadre behavior in EBF promotions

It can be said that in promoting EBF, cadres only wait at the ISP. Even though face-to-face counseling, whether at the mother's house, at the clinic, or at the ISP which is direct support, is an instrument that can strengthen positive breastfeeding habits.[6] Cadre behavior shows that their performance in EBF promotion is still low. Several factors can influence the performance and behavior of cadres such as perceptions of cadres who consider that increasing status, self-esteem and meaningful responsibilities in society are seen as appreciation for voluntary service. In addition, incentives also affect one's motivation and performance.[7] Socio-cultural factors (including gender norms and values and disease-related stigma), safety and security and the level of education and knowledge of the target group are factors that can also influence the performance and behavior of cadres.[8]

3. The ability of cadres to carry out EBF promotions

Cadres have not been able to carry out EBF promotion activities in accordance with the principles of health promotion. This is due to the lack of EBF promotion knowledge and skills. Low knowledge can be a cause of cadres' inability to change behavior in the community for EBF.[9] Several factors can influence ability, namely: Beliefs and values, skills, experience, personality characteristics, motivation, emotional problems, intellectual abilities, organizational culture.[10]

4. Constraints in carrying out EBF promotions

(1) Families do not support

Negative influences from the family can influence mothers to give EBF, such as the assumption of families that breast milk is not enough for newborns, there are some restrictions that should not be eaten by nursing mothers and the habit of providing food or drinks other than breast milk before a 6-month-old baby mother's decision to EBF. Support from the husband and grandmother of the baby has a close relationship with the duration and success of EBF.[11] In addition, communication support and positive experiences of grandmothers in breastfeeding affect mothers to breastfeed their babies.[12] Adequate family support for mothers is associated with an increase in the practice of EBF by 2.85 times (relative to those with poor family support).[13]

(2) There are health workers who have not supported.

Babies born in several maternity clinics and hospitals, by midwives are given formula milk on the grounds that the mother's milk has not come out and is not enough for the baby. One of the triggers for this was given a package of free formula milk by formula milk producers to hospitals, offering various gifts to health workers, sponsoring religious activities, funding seminars for health professionals, and conducting public health activities to promote their products.[14,15] Formula milk given by midwives when returning home will encourage mothers to stop EBF.[16] Mothers are also more likely to stop EBF if health care providers recommend using formula supplementation, what else is the condition of mothers who are still weak after delivery.[17,18]

5. Needs for cadres to improve the ability of EBF promotions

ISP cadre training is an activity carried out to improve the competence of ISP cadres in terms of ability, knowledge, technical skills and dedication of cadres.[19] Competence in knowledge and skills tends to be easier to develop with education and training.[20] So to improve the competence of ISP cadres, training is needed to improve their knowledge and skills. Continuous training can improve certain task skills and performance.[21,22] Training on health workers creates awareness among staff to improve patient-health care relations in agencies for changes in organizations.[23] Better performance after training is associated with supervision.[24,25]

The function of coaching is so that employees perform tasks in accordance with what is desired to achieve organizational goals and increase team spirit in cooperation. Effective coaching will improve the ability and willingness of staff to create harmony between management goals and staff goals.[26]

Conclusion

The need for EBF promotion training and guidebooks for cadres, as well as the need for guidance and supervision by public health centers so that the implementation of EBF promotion is maximized.

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Correlation between family support and quality of life among hypertensive patients☆

Sofiana Nurchayati*, Wasisto Utomo, Darwin Karim

Faculty of Nursing, Universitas Riau, Indonesia

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KEYWORDS
Family support;
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Abstract
Objectives: The study objective were to determine family support, assess HRQol and examine whether family support correlates to Qol amelioration among patients with hypertension.
Method: Quantitative study with retrospective designs was used to carry out this research. Data collection for Qol and family support were to measure condition of the hypertensive patients for the last month. Meanwhile, blood pressure values as a criterion to select research participants based on the current measurement during the study. Data was collected from 30 participants who selected by using convenience sampling technique from hypertensive patients in Teluk Kenidai Village, Kampar. Ethical consideration was obtained by approval of the research committee in University of Riau.
Result: Univariate analysis shown that majority of participants are female (24 or 80%), the most of them have suffered from mild hypertension (15 or 50%) and dominated by length of the disease 1–5 years (14 or 46.7%). Descriptively, majority of the participants have good level of Qol (17 or 56.7%) and good of family support (19 or 63.3%). Furthermore, inferential statistic (chi-square) has shown that p value is $0.454 > \alpha$ (0.05) indicates that there is no correlation between family support and Qol.
Conclusion: Can be concluded that Qol and family support among hypertensive patients in Teluk Kenidai Village were in good level but statistically, the level of Qol among them significantly was not correlated with their family support.

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* Corresponding author.
E-mail address: sofiananur14@yahoo.co.id (S. Nurchayati).

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Introduction

Hypertension is one of the deadly diseases in the worldwide. Recently, 1 billion or 1 in 4 adult population in the worldwide suffers from this disease. According to a survey conducted by the Word Health Organization (WHO) in 2010, the number of global hypertensive population around 26.6% is men and around 26.1% is women. It was estimated will be increased to 29.2% in 2025 (Apriany, 2012). According to Riskesdas data in 2013 that hypertension is a health issue in Indonesia with prevalence 25.8%.

Hypertension is a silent killer disease with various symptoms in every individual and it is similar with other disease's symptoms. The symptoms are headache/heavy sensation in the neck, dizziness (vertigo), palpitations, fatigue, blurred vision, ringing in the ears (tinnitus), and nosebleeds (Ministry of Health RI, 2014). Hayens et al. (2008) stated that 30% of hypertensive patients tend to mention that they have a poor health status compared to those who are not hypertensive. Poor health status indicates that quality of life is not good. Long high blood pressure (persistent) lead to cause damage the nephron in the renal (kidney failure), heart (coronary heart disease) and brain (causing stroke) if not detected early and receive adequate treatment. Currently, the number of uncontrolled hypertensive patients is increase (Ministry of Health RI, 2014). Patients with hypertension will need family support system to succeed blood pressure control.

The prevalence of hypertension in Indonesia based on ≥18 years of measurement was 25.8%. In conjunction to it, prevalence of hypertension in Riau is 20.9% (MOH, 2013) and Pekanbaru's population who suffer from hypertension counted 12,781 people (Pekanbaru City Health Office, 2010).

Pre-research study with interview to hypertensive patients and their families on February 1, 2017 on 10 revealed that 6 people (60%) stated that they were not able to self-manage their hypertension properly because lack of family support such as not provide hypertension diet, when they want to do BP check there is no family member send them to Puskesmas or clinics, family does not remind them to take anti-hypertension medication. Patients with hypertension complaint that when they got recurrent of the disease, they suffer from physical weakness, dizziness or headaches and psychological disorders (tend to emotionally angry), fatigue and thus affecting their quality of life (Table 1).

Table 1 Distribution of respondents based on the characteristics of hypertension, age, sex, length of hypertension, family support and quality of life ($N = 30$).

Variable	*n*	(%)
Severity of hypertension		
Mild	15	50
Moderate	11	36.7
Severe	4	13.3
Age		
Early adult (26–35)	1	3.33
Late adult (36–46)	6	20
Early elderly (46–55)	7	23.33
Late elderly (56–65)	13	43.33
Senior (≥65)	3	10
Gender		
Man	6	20
Woman	24	80
Length of hypertension		
<1 year	7	23.3
1–5 years	14	46.7
>5 years	9	30
Quality of life		
Good	13	43.3
Poor	17	56.7
Family support		
Good	19	63.3
Poor	11	36.7

Table 2 Bivariate analysis.

Family support	Quality of life	
	Good	Poor
Good	7 (36.8%)	12 (63.2%)
Poor	6 (54.5%)	5 (45.5%)

Method

The research method used is correlation, with retrospective and prospective data collection. Retrospectively in this study is to assess the quality of life among hypertensive patients for the last month condition and prospective design to carryout measurement of blood pressure at the time of the study. At the time of data collection the study also carried out blood pressure measurements to identify the classification of hypertension suffered (mild, moderate, severe) (Table 2).

Assessment quality of life for the population conducted by using the International standard and validated WHO-QoL questionnaires. Meanwhile assessment family support by using questionnaires with components such as informational, assessment, instrumental and emotional supports.

This research was conducted in the Teluk Kenidai Village, Kampar Regency. The population of this study is hypertensive patients in Kenidai Bay Village. The samples taken in this study were 30 people who met the inclusion criteria; adults and elderly, diagnosed with hypertension, able to communicate, live with family, and have ability to do activity daily living (ADL).

Result

Bivariate analysis using chi-square obtained p value = 0.454 > ($\alpha = 0.05$), the finding can be interpreted that there is no relationship between family support and the quality of life among hypertensive patients in Teluk Kenidai Village.

Discussion

Based on the results of the study, majority of hypertensive patients (15 people or 50%) were suffered from mild hypertension.

The findings of the study have shown that majority hypertensive patients are women (24 people or 80%). Participant of this study majority is women because the study was conducted during the day, when the head of the household (husband) was working outside the home so that more women were found at home.

The study also found that length of hypertension suffered by the patient majority is 1–5 years (14 people 46.7%). In nature, patients with hypertension will check their disease when got symptoms that interfere their daily activities.

The findings also shown that majority of hypertensive patients (13 participants or 43.33%) is the elderly with age 56–65 years old. Physiologically elderly experience changes in blood vessel structure that decrease elasticity of the blood vessels which lead to increase blood pressure and produce hypertension. In detail, this study found that respondents got hypertension in mild age onset and genetically related to their elderly parents disease.

Based on the findings of the study, the majority hypertensive patients' quality of life is poor (17 respondents or 56.7%). Accordingly, Flanagan (1978 in Mahdi, p. 20), suggested factors associated with quality of life included education, family life, peace of mind, and work. WHOQOL (2004) in Murphy et al. (2000), has defined that quality of life is an individual's perception on his position of life, within context of culture and value system in which the individuals lives and the relationship to their goals, hopes, standards and desires. Respondents in this study more than half had poor quality of life. They experienced headache, dizziness, weakness, sometime palpitation, could not carry out activities as usual because they often got sleep deprivation and have to bedrest. This condition, hypertensive patients feels that the daily activities target cannot be realized comprehensively then lead to decreases the quality of life. The most domains affected by the disease are physical and psychological aspects. Respondents experienced uncomfortable, fatigue on their body and often angry or emotionally sensitive due to hypertension.

Based on the results of the study, majority of hypertensive patients got good level of family support (19 respondents or 63.3%). Indonesian Ministry of Health (1998) has highlighted that family is the smallest unit of the community which consists of the Head of the Family and several people family member who live together in a place under one roof and live with mutual dependences.

In some communities in rural areas, when they have a family members suffer from a disease and fall sick, they will try to help them with traditional remedies then get professional help to take care and cure the disease. In this event, the role of family is to provide family support since onset of the disease such as provide required diet and ensure medication to recover the disease quickly further able to carry out their normal role and functions

Conclusion

The findings of the study have shown that majority of hypertensive patient (15 patient 50%) suffers from mild hypertension. Respondent of this study was dominated by female (24 respondent 80%). The most length of the disease suffered by patient is 1–5 years (14 respondent 46.7%), Majority hypertensive patient have poor level of quality of life (17 respondent or 56.7%), and majority of hypertensive patients got good level of family support for their hypertensive care (19 respondents or 63.3%). Bivariate analysis has found that p value = 0.454 > α (0.05), can be interpreted that there is no relationship between family support and quality of life among hypertensive patients in Teluk Kenidai Village.

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Views about getting older as predictors to self-esteem of professionals nearing retirement☆

Carlo Bryan C. Borrico

Faculty, College of Nursing, System Plus College Foundation, Angeles City, Philippines; Alumni, Holy Angel University Graduate School, Angeles City, Philippines

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KEYWORDS
Aging perception;
Self-esteem;
Professionals

Abstract
Objective: This study aimed to measure the participants' views on aging, as well as their self-esteem. More so, it sought to determine if views of getting older significantly predicts the self-esteem of professionals nearing retirement.
Method: A descriptive correlation design was used. Through convenience sampling, 100 professionals nearing retirement were recruited and asked to answer the Aging Perceptions Questionnaire (APQ) and Rosenberg Self-Esteem Scale. Frequency, percentage, mean, standard deviation and multiple regressions were used.
Results: The results revealed that both emotional representations and consequences positive statistically and significantly predicted self-esteem. This means that when individuals think less of the mentioned emotions, the higher their self-esteem will be.
Conclusions: The findings of this study emphasized the importance of maintaining aged person's self-worth, identity, sense of purpose and self-esteem which are usually lost prior to retirement. It highlights the most common age-related changes usually experienced by aged person.

Introduction

Aging is a progressive process that begins at birth.[7] As people age, changes in their bodies occur. They experience decline in heart function; change in joint structures; decrease in bone density; their skin becomes thinner, drier, and less elastic; and their vision starts to decline.[3,9,10,13,14] In fact, aside from these physiologic alterations, emotional and psychosocial changes may also occur. Aging is not only a scientific concept but also a mental construct that acts within people's cognitive systems.[4] The lives of older persons may be influenced by their previous lifestyle, education, culture, perception, and beliefs[6] and that there might be a decreased interaction between them and the society.[2]

In recent years, several studies have found that individuals who are aging may experience loss of self-worth and identity,[12] as well as life dissatisfaction[7,11] due

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E-mail address: borrico.carlo@auf.edu.ph

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Table 1 Demographic characteristics of the participants.

Characteristics	Frequency	Percentage
Age in years		
50–54	47	47
55–59	35	35
60–64	18	18
Gender		
Male	25	25
Female	75	75
Civil status		
Single	12	12
Married	77	77
Separated	1	1
Widowed	10	10
Education		
College graduate	87	87
Post-graduate	13	13
Occupation		
Accountant	14	14
Administration	25	25
Agriculturist	14	14
Dietician	2	2
Engineer/Architect	2	2
Medical Technologist	2	2
Nurse	27	27
Pharmacist	1	1
Teacher	13	13

to several factors such as loss of spouse,[1] decrease in income,[5,10] and poor health.[8] This would give aged person to self-reflect and eventually transfer their authority to the younger generation.[2] After a thorough search using ProQuest, EBSCOhost, Cumulative Index to Nursing and Allied Health Literature [CINAHL], Science Direct, and Gale Databases, it was found out that there is no published literature yet that correlates the views on aging and the self-esteem of individuals, specifically Filipino professionals nearing retirement. Therefore, this study aimed to measure the participants' view on aging and this self-esteem, and see if they are related with each other.

Method

Research design

A descriptive-correlational design was used to determine if participants' views on aging significantly predicts their self-esteem.

Sample and setting

Through convenience sampling, 100 professionals nearing retirement were recruited in this study. They are at least bachelor's degree-holders, 50 to 64 years of age, and residing within Angeles and Mabalacat city, Philippines.

Instrument and data collection

Two instruments were employed in this study: The Aging Perceptions Questionnaire (use to assesses one's views on aging) and Rosenberg Self-Esteem Scale (use to assesses one's self-esteem).

Data analysis

The Statistical Package for Social Sciences (SPSS) version 20 was used to run both descriptive and correlational statistics. Frequency, percentage, mean, and standard deviation were used for descriptive purposes; while multiple regression analysis was used to determine if aged person's view on getting older significantly predicts the self-esteem of professionals nearing retirement.

Results

One hundred (100) professionals nearing retirement participated in this study. Almost half of the participants belong to the age group 50–54 years (47%) and three-fourths of them are female (75%) and are married (77%). Moreover, most of the surveyed participants are nurses (27%) and are administrative personnel (25%). Interestingly, 13% of these professionals attended post-graduate schooling after obtaining their baccalaureate degrees (Table 1).

The mean scores of the participants' perceptions on aging and the level of their self-esteem are reported in Table 2. The participants agree that aging is a chronic phenomenon ($x = 3.53$, SD = .895), it actually varies in nature ($x = 3.47$, SD = .778), and that they can positively control their experiences of aging ($x = 4.01$, SD = .531). More so, they strongly believed that aging positively impacts their lives across a variety of conditions ($x = 4.28$, SD = .718). On the other hand, a self-esteem mean score of 22.32 (SD = 4.36) was seen among professionals nearing retirement. This shows that the higher the score, the higher the self-esteem of a certain individual or a group.

The percentage of participants' experience of health-related changes is reported in Table 3. The most common changes that the participants experienced were vision and eyesight changes (98.84%), weight problems

Table 2 Participants' perceptions on aging and their self-esteem.

	Mean	SD
Views about getting older		
Timeline (chronic)	3.53	.895
Timeline (cyclical)	3.47	.778
Emotional representations	2.74	.895
Control positive	4.01	.531
Control negative	2.82	.901
Consequences positive	4.28	.718
Consequences negative	3.21	.908
Level of self-esteem	22.32	4.360

Table 3 Percentage of participants' experience of health-related changes.

Health-related changes	Actual Changes experienced	Perceived Age-related changes
Weight problems	96.92	66.67
Sleep problems	95.65	79.55
Back problems	96.08	73.47
Painful joints	96.49	72.73
Not being mobile	91.30	100
Loss of balance	94.12	87.50
Loss of strength	96.30	86.54
Slowing down	96.30	92.31
Cramps	95.45	78.57
Bone or joint conditions	94.44	76.47
Cardiac or heart problems	96.67	51.72
Ear or hearing problems	92.31	83.33
Vision and eyesight changes	98.84	92.94
Respiratory problems	85.71	58.33
Foot problems	93.10	59.26
Depression	81.82	44.44
Anxiety	81.82	66.67

(96.92%), and cardiac or heart problems (96.67%). On the other hand, all participants (100%) perceived not being mobile as one of the most common age-related changes that may occur, aside from vision and eyesight changes (92.94%), and slowing down (92.31%).

A multiple regression analysis was used to determine if timeline (chronic), timeline (cyclical), emotional representations, control positive, control negative, consequences positive, and consequences negative (subscales of the perception on aging) significantly predicted the participants' self-esteem. The results indicated that the predictor variables explain 23.4% of the variance ($F(7, 92) = 4.025$, $p = .001$).

Also, it was found out that both emotional representations ($B = -1.323$, $p = .024$) and consequences positive ($B = 1.842$, $p = .005$) statistically and significantly predicted self-esteem (Table 4). It is evident from the results that the emotional response generated by aging is negatively related with self-esteem. On the other hand, positive beliefs about the impact of aging one one's life is positively related with self-esteem.

Table 4 Regression coefficients of the predictor variables.

Predictor variables	Coefficient	Sig
Constant	16.717	.001
Timeline (chronic)	−.203	.690
Timeline (cyclical)	1.174	.086
Emotional representations	−1.323	.024
Control positive	−.204	.808
Control negative	.152	.824
Consequences positive	1.842	.005
Consequences negative	−.461	.440

Dependent variable: Self-Esteem.

Discussion

The purpose of this study was to determine level of the participants' views on aging, as well as their self-esteem. In addition, it sought to identify if aged professionals nearing retirement's view of getting older significantly predicts their self-esteem. It was observed that emotional representations are inversely related with self-esteem. These emotional representations are negative emotions generated by aging which include worry, anxiety, depression, distress, irritation, sadness, and the like.[1] This means that when individuals think less of the mentioned emotions, the higher their self-esteem will be. On the other hand, a positive belief about the impact of aging is positively associated with their level of self-esteem. Meaning, the more they think of the positive impacts, the higher their self-esteem will be.[7]

The positive view of the aging process enhances self-esteem and wellbeing. Contrariwise, undesirable self-perceptions about aging yielded to negative hopes about one's process of growing old. Aside from aged person's view of getting older, most participants reported that they experiencing vision changes, weight problems and cardiac problem. Moreover, almost all participants reported that being mobile is the most common age-related change that they have experienced.[7]

Conclusion

The findings of this study emphasized the importance of maintaining aged person's self-worth, identity, sense of purpose and self-esteem which are usually lost prior to retirement. It highlights the most common age-related changes usually experienced by aged person. Emphasis should also be put on creating more programs focusing on giving aged person a longer and better lives through disease prevention, health promotion, health education to maintain their sense of self-worth and self-esteem.

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Clay handbuilding among children with spinal cord injuries: Towards educational protocol development☆

Jerry V. Manlapaz

School of Nursing, University of Santo Tomas, Manila, Philippines

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KEYWORDS
Clay hand building;
Children;
Spinal cord injuries;
Educational protocol

Abstract
Objectives: This study identifies and describes children with spinal cord injury with paraplegia and examines an intervention that can contribute to nursing education and practice.
Methods: This qualitative Hermeneutic phenomenological research with multiple triangulations which include data, method, and investigator triangulation, with iterative approach in data analysis were utilized in data collection and analysis. A total of 8 children with their parents or guardians were purposively selected. A semi structured interview, storytelling and clay hand building was used to collect data. Analysis of molded clay figures was done by the child's personal interpretations and further interpreted by an expert in the field of psychology and art therapy.
Results: The experiences of children have revealed five themes and seven categories. The children's experiences are as follows; happy memories, representation of illness and hospital confinement, love for family, faith, and hope.
Conclusions: Based on the results, an educational protocol for clay hand building was found effective.

Introduction

Spinal cord injury may render a person dependent on caregivers. As a nurse care provider, and educator the researcher had met various cases of clients who experienced spinal cord injury. It is essential that support to these clients be provided from the beginning and treat these individuals with respect as they begin to rebuild their lives, remembering that the disease and rehabilitation process is both physically and emotionally interfering. Problems in role function arise as normal activities are disrupted that these individuals occupy in society fulfilling the need for social integrity.

Spinal cord injury is a debilitating condition where the most obvious deficit is an impaired motor function ranging from minor deficits to complete paralysis of those parts of

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E-mail address: jvmanlapaz@ust.edu.ph

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the body innervated by spinal segments below the level of lesion.[1] It can be Acute spinal cord injury or a sudden traumatic injury that either results in a bruise, a partial injury or a complete injury to the spinal cord. While partial spinal cord injury is sometimes called an incomplete injury were the spinal cord is able to carry some messages to and from the brain to the rest of the body resulting in a near-total loss of motor and sensory function.[2]

Children with spinal cord injuries faces a lot of challenges, one of these are for them to stop their schooling due to their conditions which most of the time requires long treatment, adaptation and hospitalization. The researcher having a diverse experience in orthopedic nursing and education for 17 years tried to create means of developing some solutions by utilizing an independent nursing action like clay hand building. Art therapy in the form of clay hand building as a divertional intervention served as a medium to allow children with spinal cord injuries to express thoughts, feelings and desires that are sometimes difficult to express verbally.

The researcher entered the education and nursing profession for a multitude of reasons; hope, passion, and determination to somehow make a difference in the lives of patients specifically those with spinal cord injuries. The study helped the researcher, nurses and their parents gain an in depth analysis and understanding of children with spinal cord disabilities. With this study, better understanding of their experiences will equip all people responsible for their care, enough knowledge, skills and attitude that will facilitate the best possible care for them, through the development of an educational protocol that will serve as a guide in performing the propose independent nursing action will help improve nursing education and practice.

Method

This study utilized a qualitative hermeneutic phenomenological research design. Qualitative research is a systematic, subjective approach used to describe life experiences and giving meaning.[3] Phenomenology is particularly suited to disciplines that place high value on understanding the patient/client experience. It is a careful and systematic reflective study of the lived experience.[4] The aim of phenomenology in this study is to generate understanding into the essential nature of a particular phenomenon under investigation which is the experiences of children with spinal cord injuries.

Multiple triangulation with iterative process of data analysis were utilized in this research. Triangulation means the researcher uses different methods in order to achieve collaboration of results achieved from different approaches which increase the validity of the study.[5] Triangulation is a useful strategy for the enhancement of credibility.[6] Three types of triangulation were use in this study. First is data triangulation, which refers to use of different data sources.[7] Data from this research were generated from the child diagnosed with spinal cord injuries and the child's parent or guardian. Second is method triangulation in which multiple data collection methods were used, such as semi-structured interviews, clay hand building and storytelling and lastly investigator triangulation in which more than one person is used to collect, analyze, or interpret set of data.[6] While data analysis was done by the researcher, a registered psychologist and an art therapist were consulted and collaboration was utilized.

Children were selected using purposive sampling. Saturation of data was the basis in determining eight (8) participants. Saturation of data is a phenomenon that occurs when additional sampling provides no new information, or there is a redundancy of previously collected data. Sample size in qualitative study is determined when saturation of data occurs.[3] For the purpose of homogeneity, the following criteria for the selection of children participants were utilized: (1) diagnosed with spinal cord for at least 1–3 months, (2) with paraplegia, (3) ages 10–13 years old, (4) regardless of gender, (5) with available parent or guardian to sign the consent in behalf of the child. In the conduct of this research study, the researcher adhered to the principles of ethical standards of informed consent, confidentiality, anonymity, and respect for person, beneficence and justice.

Analysis and interpretation of molded clay figures were done individually at the bedside by the child participants by allowing them to describe the meaning of the figures they formed in relation with their experience as a child with spinal cord injuries. A scheduled appointment with a registered art therapist and registered psychologist were done for the interpretation of the art pieces. Thematic analyses were both utilized by the two experts. The researcher then triangulated the findings by discussing and fusing the common themes elicited by the child participants, registered art therapist and registered psychologist.

Results

The lived experiences of children with spinal cord injuries in a selected tertiary specialty hospital in Quezon City has revealed five themes (5) themes and seven (7) categories that emerged during data analysis in which the researcher organized the data. These can be summarized into three (3) major events, Before the Injury, During Hospitalization and the Future.

Discussion

The following were the themes generated

Before the injury. The theme ''*Mga Ala-Ala Bago Ma Ospital*'' (Memories Prior to Hospitalization) is a clear representation of the participant's recollection of their experiences prior to injury and hospitalization. These includes ''*Mga Laro*'' (Plays) which is a depiction of their usual play experiences, ''*Mga Mahal Ko sa Buhay*'' (Loved Ones) which represent their good memories usually with family members, and ''*Eskuwela*'' (The School) where the participants reminisce their usual school experience. **During hospitalization.** The participants' confinement reveals the following; ''*Buhay Ospital*'' (Life in the Hospital) which includes scenarios and situations where the children with spinal cord injuries faced difficulties, pains and different struggles due to their confinement. Categories like ''*May Sakit Ako*'' (I am Sick) reveals awareness of the children with their present condition and ''*Mga Masasakit na Ala-Ala*'' (Painful Memories) are situations and experiences that

caused tremendous physical, emotional and psychological sufferings. The theme ''*Pagmamahal sa Pamilya*'' (Loved for Family) revealed how each participants cherished, appreciate and prized every members of their family, which are source of strength for them. Loved and faith for God despite of the experience is well manifested by these children with the theme ''*Tiwala sa Diyos*'' (Trust in God). **The future**. Hope amidst all the personal life encounters of these children drives them to have a positive outlook in life. The theme ''*Sinag ng Pag-Asa*'' (Glimmer of Hope) is a clear manifestation that things will bring a positive change like ''*Gagaling Ako*'' (I Will Get Well) and that they can achieve their hopes and dreams, ''*Mga Pangarap*'' (Dreams).

Conclusions

The participants of this study showed that they have experienced difficulties during the process. The injury they sustained tested their physical, emotional and psychological well being. But despite of all the hardships the participants viewed the situation an opportunity to be optimistic in life. Thinking positively and with strong support systems is one of the coping strategies that they utilized in order to manage the challenges. With strong faith and well-built desire that things will turn positive, all the participants look forward for their hopes and dreams in life.

Clayhand building showed a positive promise of being used by nurses as a divertional therapy for children with spinal cord injuries.

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The Ratu's Model: A prevention model of postpartum depression☆

Ratu Kusuma[a,*], Budi Anna Keliat[b], Yati Afiyanti[b], Evi Martha[b]

[a] *Departement of Nursing, Baiturrahim School of Health, Indonesia*
[b] *Faculty of Nursing, Universitas Indonesia, Indonesia*

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KEYWORDS
Ratu's model;
Postpartum depression;
Depression prevention

Abstract
Introduction: The Ratu's Model is a nursing model to prevent postpartum depression, is a product of Ratu's dissertation. Depression is one of the common psychological problem experienced by postpartum women. The number is estimated to reach 20% in Indonesia, 15–20% in the Riau Province, and must to be pressed to 1%.
Objectives: This study aims to identify the effectiveness of Ratu's Model to prevent postpartum depression.
Method: Quasi-experiment research alongside with pre–post test analysis of the control group, number of the respondents was undergone among 54 women pregnant and the spouses in each intervention and control group. Educational intervention was given toward intervention group for 3 times, with 3 times monitoring, and 3 times measurement.
Result: A significant correlation between Ratu's Model with lowered postpartum depression incidence.
Conclusion: The Ratu's Model is effective lowering the incidence of postpartum depression.

Introduction

Postpartum depression is a psychological disorder that might occur after few days of postpartum, it usually occurs in the week 2 or 3 and it may last for 1–2 years. The symptom consists sadness, easily offended, crying, sleep disorder, decreased libido, easily exhausted, hard to concerntrate,

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* Corresponding author.
E-mail address: ratukusuma1975@gmail.com (R. Kusuma).

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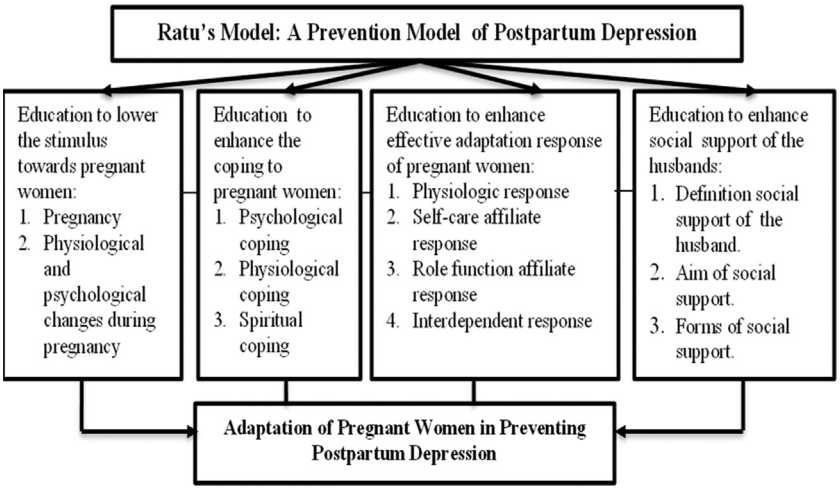

Figure 1 The Ratu's Model.

Table 1 The changed frequence of depression before and after being intervened by the Ratu's Model ($n = 108$).

Depression incidence	Intervention ($n = 54$)		Control ($n = 54$)		Total ($n = 108$)	
	n	%	*n*	%	*n*	%
Pretest	10	18.52	7	12.96	17	15.74
Posttest	4	7.41	7	12.96	11	10.19

guilty feeling, feeling unworthy, suspicious, lack interest to the baby, feeling unable being a mother, and even potentially harm the baby.[1,2] The number is estimated to reach 20% in Indonesia, 15–20% in the Riau Province, postpartum depression must to be pressed to 1%.[3–7] The exact cause of postpartum depression has not yet been identified, some theorized that it is affected by biological, psychological, and demographic factors. The biologic factor means physiological changes occurred during pregnancy, labor, and postnatal, nutritional deficiencies, metabolic disorder, anemia, hormonal changes, fatty acid changes, and obstetric-related complications suffered by the pregnant women.[2,4,7,8]

Some of psychosocial factors are past failure in marriage, husband's minimum support or any other significant others, domestic violence, history of depression in past pregnancy, history of depression in the family, and mood disorder during period of menstruation.[4,9,10] Demographic factor consists of the age of the pregnant women, educational degree, working status, the number of children, and the norm and cultural perspectives in the society. The other factors are socioeconomic factor and unhealthy lifestyle, such as smoking, consuming alcohol and drugs for recreational purpose.[4,11]

Previous studies conducted be the researcher shows that the education provided in the in healthcare services has not yet prioritized integrated prenatal care based on Roy Adaptation Model contextualized among pregnant women, including but not limited to the prioritization of nutrition preventing postpartum depression. Henceforth, a brand new Ratu's Model needs to be established.

Methods

This study is a quasi experimental pre–posttest with the control group. The study was undergone by implementing the model through providing education toward the pregnant women and their husbands and identifying the impact of the Ratu's Model to prevent postpartum depression. The samples in this study were the pregnant women in the second trimester (week 20–27). The intervention and the control group were then divided into 54 participants. The instrument used Edinburgh Postpartum Depression Scale (EPDS). This research was done in 4 health center in Kabupaten Kampar of Riau Province.

The Ratu's Model

The model involved four main components which were developed based on Roy Adaptation Model.[12] which were education to enhance stimulus of pregnant women, education to enhance coping mechanism, education to enhance adaptive behavioral response, and education to enhance social support of the husband. The more detailed of Ratu's Model is presented in Figure 1.

Education is provided toward the pregnant women and the husbands. Of the intervention group for 3 times for 27 days, each of the sessions was held in 9 days and every session was given 50–60 min period of time. After all the intervention ended, the visit would then be executed three

Table 2 The effectiveness of the Ratu's Model toward the lowered score of postpartum depression ($n = 108$).

Group	B	*p* value
Intervention and control	2.103	0.001

times as monitoring system toward the result of education. Multivariat analysis was done by using general linear model-repeated measure (GLM-RM).

Result

The effectiveness of the Ratu's Model toward the lowered incidience and score of pregnant women is presented in Tables 1 and 2.

Table 1 described the incidence of depression in both groups prior and subsequent to the intervention which reaches the number of 17 (15.74%). After being intervened, depression lowers to 60% in intervention group.

Table 2 described that the average score of the postpartum depression in the intervention group is found better than those in the control group with the distinction of 2103 ($p = 0.001$).

Discussion

Result of the study indicates that the Ratu's Model is effective in lowering the postpartum depression. The women in the intervention group have 60% of lowered chance of experiencing postpartum depression. The control group, however, do not have the same development. The psychoeducation and the counseling during the period of pregnancy may reduce the incidence of depression during and after the pregnancy.[4] The psychoe and educational support group is effective in lowering the incidence of postpartum depression in the period of perinatal.[13] Happiness: ''Mom and Baby'' package given to the women with postpartum depression, husband or the parents may lower the phenomenon of depression.[14]

The lowered incidence of the postpartum depression in the intervention group may also be caused by the nutrition consumed by the pregnant women, especially the nutrients that may even prevent postpartum depression. Based on the 12 weeks nutritional intake obtained from the respondents, it is known that pregnant women fulfill the intake of carbs, proteins, minerals, and the antioxidants. That 99% of pregnant women consuming B6, B9, vitamin E, vitamin D, omega-3 indicates lower symptoms of postpartum depression.[15] Consumption of selenium in the 6 or 8 weeks old of postpartum phase in the intervention group lower the indication of postpartum depression.[16]

Conclusions

The Ratu's Model is effective to lowering the incidence of postpartum depression. Its is recommended that the Ratu's Model may be utilized as more focus in maternity nursing service to prevent of postpartum depression in any healthcare services.

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Factors affecting the performance of public health nurses in family nursing care☆

Sovia*, **Suharti, Yellyanda, Abbasiah, Debbie Nomiko**

Nursing Department, Jambi Health Polytechnic of Health Ministry, Indonesia

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KEYWORDS
Performance;
Public health nurses;
Family nursing care

Abstract
Objective: To determine factors that influence the nurses' performance in family nursing care in public health centers in Jambi City.
Method: A cross-sectional study was conducted from April to October 2016 using questionnaire with public health nurses as participants. The survey included questions on knowledge, attitude, self-confidence, motivation, personality, and nurses' performance in family nursing care, and was completed by 114 nurses. Data analyses used for this study were chi-square test and logistic regression.
Results: The factors affecting the nurses' performance in family nursing care were attitudes (p 0.003; 95% CI 1.583–9.823), motivation (p 0.002; 95% CI 1.672–9.972), and personality (p 0.005; 95% CI 1.466–8.830).
Conclusions: Need efforts to improve the attitude, motivation, and personality of nurses in providing family nursing care, such as training, supervision, and rewards.

Introduction

Nurses who work in public health centers have the primary responsibility to carry out nursing care services to clients, both individuals, families, special groups, and the community.[1] The evaluation of nurse's role and function in public health centers showed that many nurses' focus to curative care in providing nursing care, while implemented family nursing care was not optimal. This happens because of a lack of nurses' ability to carry out family nursing care activities caused by limited nursing care training and many abundant tasks for nurses.[2] Data National Health Facility Research in 2011 show that the achievement of family nursing care in public health center throughout Indonesia was 61% from a national target.[3]

Tafwidhah et al.'s[4] study entitled ''The Public Health Nurses' Competencies and the Level of Implementation PHN in Pontianak'' shows that there is a relationship competency of public health nurses with the level implementation PHN (p-value = 0.000; α = 0.05). Amperaningsih and Agustantis'[5]

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* Corresponding author.
E-mail address: soviadamhur@gmail.com (Sovia).

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study entitled ''Nurse's Performance in Implementation of Public Health Nursing (PHN)'' showed that implementation of PHN activities are not running (80%).

The initial survey to three community health coordinators in public health center of Jambi City found that the three public health center had carried out community service activities, especially family nursing care. But, 2 persons said that the implementation was not expected because there were many public health nurses were lazy to go to the field and felt forced to do home visits, and had not documented their activities. Whereas 1 person community health coordinator said that public health care activities were going well and each nurse had the awareness to carry out family nursing care. Three coordinators said that each functional nurse had an obligation to carry out a nursing care in four vulnerable/poor families every month and the head of the public health center provided the opportunity for nurses to take to the field. It is necessary a study find how the nurse's performance in family nursing care and the factors that influence it.

Method

This study was a descriptive analytic study with a cross-sectional design. The independent variables are individual nurse factors (knowledge, attitude, self-confidence, motivation, and personality); and the dependent variable is the performance of nurses in family nursing care. The study was conducted in April to October 2016 in 18 public health centers throughout Jambi City. Samples were 114 nurses taken the total sampling. Data explorers were carried out with questionnaires. Data analysis used chi-square and logistic regression.

Results

Table 1 shows that most nurses have good performance in family nursing care (52.6%).

In this study (see Table 2), it can be seen that most nurses have good knowledge of family nursing care (65.8%), poor attitude toward family nursing care (57%), poor confidence (50.9%), low motivation (55.3%), and have good personality (53.5%).

Table 3 shows three individual factors that have a significant relationship with the performance of nurses in family nursing care (p-value <0.05), including attitude, motivation, and personality. Author concluded that nurses with good attitudes have 2.9 times chance to show good performance compared to nurses with good enough attitudes (OR = 2.903; 95% CI = 1.3–6.29); nurses with high motivation have an opportunity 3.9 times to show good performance compared to nurses with low motivation (OR = 3900; 95% CI = 1.77–8.6); and nurses with good personalities have 2.7 times the opportunity to show good performance compared to nurses with poor personality (OR = 2.701; 95% CI = 1.3–5.77). Table 3 shows that two individual factors that have no significant relationship with the nurses' performance in family nursing care (p-value >0.05), including knowledge and confidence.

Based on Table 4, public health nurses with a good attitude have an opportunity of 3.9 times to show good performance compared to nurses with a bad attitude after being controlled by motivation and personality. Too, nurses with high motivation have an opportunity of 4.1 times to show good performance compared to nurses with low motivation after being controlled by attitude and personality. The results of the analysis also show that public health nurses with good personality have an opportunity of 3.6 times to show good performance compared to nurses with good enough personality after being controlled by attitude and motivation.

Table 1 The nurses' performance in public health centers of Jambi City in family nursing care (n = 114).

Performance	N	%
Good	60	52.6
Not good	54	47.4
Total	114	100.0

Table 2 The nurse's individual factors in family nursing care (n = 114).

Variable	N	%
Knowledge		
Good	75	65.8
Not good	39	34.2
Attitude		
Good	49	43.0
Not good	65	57.0
Self-confidence		
Good	56	49.1
Not good	58	50.9
Motivation		
High	51	44.7
Low	63	55.3
Personality		
Good	61	53.5
Not good	53	46.5

Discussion

There are several factors that influence the performance of nurses in family nursing care, including environmental factors and individual factors.[6] Mangkunegara[7] explained that individual factors that influence nurse performance are knowledge, confidence, motivation, commitment, attitude, personality, demographic background, and learning.

The results of this study get three individual factors that most dominantly affect the performance of nurses in family nursing care, namely motivation, attitude, and personality. This research is in line with the research of Kawata et al.,[8] entitled ''The Performance of the Nurse in Family Health: Building Competence for Care in Ribeirao Preto, Sao Paulo, Brazil''. Their study is qualitative research with

Table 3 Relationship of individual factors with nurses' performance in family nursing care ($n = 114$).

Individual factors	Nurses' performance				Total		OR (95% CI)	*p*-value
	Good		Good enough		*N*	%		
	N	%	*N*	%				
Knowledge								
a. Good	37	49.3	38	50.7	75	100	0.677 (0.3–1.48)	0.435
b. Not good	23	59.0	16	41.0	39	100		
Total	60	52.6	54	47.4	114	100		
Attitude								
a. Good	33	67.3	16	32.7	49	100	2.903 (1.3–6.29)	0.011[a]
b. Not Good	27	41.5	38	58.5	65	100		
Total	60	52.6	54	47.4	114	100		
Self-confidence								
a. Good	30	53.6	26	46.4	56	100	1.077 (0.5–2.25)	0.992
b. Not good	30	51.7	28	48.3	58	100		
Total	60	52.6	54	47.4	114	100		
Motivation								
a. High	36	70.6	15	29.4	51	100	3.900 (1.77–8.6)	0.001[a]
b. Low	24	38.1	39	61.9	63	100		
Total	60	52.6	54	47.4	114	100		
Personality								
a. Good	39	63.9	22	36.1	61	100	2.701 (1.3–5.77)	0.016[a]
b. Not good	21	39.6	32	60.4	53	100		
Total	60	52.6	54	47.4	114	100		

[a] Meaningful at $\alpha = 0.05$.

Table 4 Multivariate modeling between individual factors and nurses' performance in family nursing care in public health center of Jambi City.

Variable (individual factors)	*B*	*p*	OR	95% CI for exp(β)	
				Lower	Upper
Attitude	1.372	0.003[a]	3.943	1.583	9.823
Motivation	1.407	0.002[a]	4.083	1.672	9.972
Personality	1.280	0.005[a]	3.598	1.466	8.830
Constant	−2.128	0.000	0.119		

[a] Meaningful at $\alpha = 0.05$.

results shows that the performance of nurses is determined by knowledge, skills, and attitudes.

Herzberg (2003) in Ref. 9 explained that the efforts made to increase the motivation of nurses were by sending nursing staff to take part in training so that nurses had new knowledge about a procedure, and held consultations about directions, expectations, and obstacles in doing nursing care family. Increased nurse motivation can help maintain the quality of family nursing care in the community (Alderfer, 1972 in Ref. 9).

Attitudes are determinants of behavior because they are linked with perception, personality, and motivation.[6] Notoatmodjo[10] states that the attitude possessed by a person determines an individual's assessment and response to an object or event.

The author argues that nurses with a good attitude and personality will show good performance, and nurses with a bad attitude and personality will show poor performance. In this study, the negative attitude of nurses is not in line with the high knowledge of nurses. This may be due to the high knowledge of nurses at the stage of knowing and understanding, not yet at the stage of applying the knowledge in their daily work.

According to the author, the poor performance of nurses in family nursing care is not caused by the lack of nurses' knowledge about family nursing care but may be due to the lack of nurses' willingness to do family nursing care. Nurses do not want to do it probably because the time of the nurse is not enough to carry it out, lacks motivation, and low awareness.

Conclusions

The nurses' performance in family nursing care in Public Health Center of Jambi City was mostly in the good category. But, there are nurses show good enough performance. In this study, individual factors that most influence the nurses' performance in family nursing care were motivation, attitude, and personality. The efforts should be made in improving the attitude, motivation, and personality of nurses, such as training, supervision, and rewards.

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Eliciting e-leadership style and trait preference among nurses via conjoint analysis☆

Christian Jay S. Orte[a,b,*], Michael Joseph Diño[b,c]

[a] College of Nursing, Systems Plus College Foundation, Angeles City, Philippines
[b] The Graduate School, Our Lady of Fatima University, Valenzuela, MM, Philippines
[c] Research Development and Innovation Center, Our Lady of Fatima University, Valenzuela, MM, Philippines

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KEYWORDS
e-leader;
e-leadership;
Virtual leaders;
AIT;
Conjoint analysis;
Virtual space

Abstract
Objective: The present study aimed to identify e-leader preferences among nurses based on several attributes namely: style, trait, and characteristics.
Method: Conjoint analysis via card sort was employed to capture the responses of 174 purposively selected nurses in the Philippines with prior interaction with a virtual nursing leader. Ten (10) orthogonal combination cards grounded from literature reviews were used as study tools. Data was collected online for about two months and was analyzed using SPSS version 21.
Results: The study surfaces that transformational leadership (0.237), authentic and artistic leadership (0.167) and physique (0.201) attributes were the most preferred style, trait and characteristics, respectively.
Conclusion: The study promotes prior notions that leaders, even at virtual spaces, are being acknowledged as an essential figure in leader-subordinate interaction.

Introduction

Nursing is a forceful and interesting profession requiring attractive and motivating role models and leaders. In current's dynamic and challenging healthcare setting, recognizing and evolving nurse leaders is one of the utmost trials encountered by the nursing profession. The perception of leadership is a multifaceted and multi-element

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* Corresponding author.
E-mail address: jay_serafica19@yahoo.com (C.J.S. Orte).

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phenomenon, and represents one of the most-observed ideas. However, no generally accepted definition or theory of leadership was essentially presented.[8,9] With the advent changes in the technology era, a style of leadership with the use of internet is now viewed as a creative and noble way in executing motivation, direction and influences to others. This is known as the e-leadership style[2] wherein the leader interacts and led people with the use of Advanced Information Technology (AIT).[2] In the Philippines, e-leadership is growing in every aspect of health care including the nursing profession. It favors to create an account easily thru social media and internet access. However, there are still no researches pertaining to the preferences on e-leadership style and trait among Filipino Nurses despite of the advent use of social media, technology, and gadgets. Cognizant of these trends, this scholarly paper aspires to elicit and identify the leadership style, leadership trait and leadership characteristics preferences of the Nurse Leaders who utilized the Advanced Information Technology (AIT). The result of this study will contribute to the burgeoning field of information technology in nursing leadership.

Research methods

This study utilized a quantitative approach specifically the conjoint technique in identifying the e-leadership styles and trait preferences among nurses. Conjoint analysis is a technique proposed by Luce and Tukey (1964) that quantifies the different attributes or preferences as part of marketing strategies.[1] Purposive sampling was utilized in this study. The inclusion criteria are as follows: (1) Registered Nurse in the Philippines, (2) who experienced virtual leadership through social media, and (3) who are willing and has the capacity to participate. A total of 174 nurses responded to the online survey. Microsoft Publisher 2010 software was used to create the orthogonal cards regarding the style, trait and characteristic of a leader. Combination of these attributes yielded eight (8) cards and two (2) hold-outs after orthogonal processing. Data collection was conducted from April 13, 2018 up to June 13, 2018. The respondents were instructed to sort the orthogonal cards as 'most preferred' or 'least preferred'. Statistical Package for Social Sciences (SPSS) version 21 & Microsoft Excel 2010 software was utilized for its data analysis.

Results

Table 1 shows the summary table of the results. With regard to the relative importance of preferred e-leaders, most of the respondents choose the leadership style (RI = 37.330) as the most important factor in executing e-leadership. In terms of part-worth utility estimates of e-leadership style, transformational leadership style yield a high score ($r = 0.237$, SE = 0.066) than transactional leadership style ($r = -0.237$, SE = 0.066). For the part-worth utility estimates for e-leadership trait, artistic and authentic leadership ($r = 0.167$, SE = 0.115) got the highest score respectively followed by emphatic leadership ($r = -0.227$, SE = 0.115) and strategic leadership ($r = -0.106$, SE = 0.115) as the least preferred. Notably, in terms of part-worth utility estimates of e-leadership characteristics, physique yields a higher score ($r = 0.201$, SE = 0.066) than gender attribute ($r = -0.201$, SE = 0.066).

Table 2 presents the arrangement of 8 conjoint cards based on the corresponding utility score. Result showed that the most preferred combination was Card 8 which is the combination of Transformational-Authentic-Physique which yielded a utility score of 5.105 followed by Card 7 which is the combination of Transformational-Emphatic-Physique that garnered a utility score of 4.711 while the least preferred was Card 2 which got a utility score of 3.835. Hold out cases were not included in the ranking of card profiles which is the Card 9 (Transformational-Emphatic-Gender) and Card 10 (Transformational-Strategic-Physique) because this cards is used to assessed the validity of card rankings by the respondents without affecting the utility score of the other card combinations. Furthermore, the validity of the computed utilities was checked using two hold-out cases which further implies that the model has a goodness of fit (Kendall's tau = 1.0).

Discussions

In this study, it was found out that Transformational Leadership Style is the most preferred leadership style. This may be linked that this type of leader knows how to motivate, empower and boost the commitment of subordinates. Transformational leadership style supports others with the dream and allows them to take better accountability for attaining the vision. Such leader helps and educates

Table 1 Preference of nurses on e-leadership.

Factor	Factor levels	Utility estimate	Std. error	Relative importance
Style	Transformational	0.237	0.066	37.330
	Transactional	−0.237	0.066	
Traits	Strategic	−0.106	0.115	
	Empathetic	−0.227	0.115	30.995
	Authentic	0.167	0.115	
	Artistic	0.167	0.115	
Characteristics	Gender	−0.201	0.066	31.674
	Physique	0.201	0.066	
(Constant)		4.500	0.066	

Table 2 Rank arrangement of orthogonal cards.

Rank	Card number	Combinations	Utility value
1	8	Transformational-Authentic-Physique	5.105
2	7	Transformational-Emphatic-Physique	4.711
3	1	Transformational-Artistic-Gender	4.703
4	5	Transactional-Artistic-Physique	4.631
5	6	Transformational-Strategic-Gender	4.430
6	3	Transactional-Strategic-Physique	4.358
7	4	Transactional-Authentic-Gender	4.229
8	2	Transactional-Emphatic-Gender	3.835
a	9	Transformational-Emphatic-Gender	4.309
a	10	Transformational-Strategic-Physique	4.832

Pearson's $R = 0.971$, $p < 0.0001$ Kendall's tau = 0.929, $p = 0.001$ Kendall's tau for Holdouts = 1.000.

followers. He/she promotes a culture of innovative growth and change rather than one which upholding the status quo.[6] This implies that nurses prefer an e-leader that is considered innovative and being technologically savvy not just being a motivator and knows how to empower his/her subordinates On the one hand, artistic leader is the most preferred e-leadership trait of nurses. This is because leadership is considered a science and art. Artistic leader produce novel and useful ideas for sustainable outputs and implement them within, as well as beyond the boundaries of the organization. Artistic leader (transactional and transformational) suggests strategizing the development of knowledge-sharing and communication among creative subordinates including communication of Information-Communication Technology.[4] This implies that nurses prefer an e-leader that is innovative and creative in leading his/her subordinates that will foster a total development and improvements in the organization. On the other hand, Authentic leaders is also the preferred e-leadership trait probably due to the fact that nurses prefer a TRUE leader that has authentic advantage for institutions to continue a spirited improvement and so be one footstep advance to their competitors. Authentic or true leaders are creative and innovative in nature and able to enhance the creativeness of his/her subordinates even with the use of technology.[7] This implies that being an e-leaders must execute truthfulness in order to be respected by his/her subordinates even the leading medium of communication and interaction is the utilization of digital or virtual spaces. The results also revealed that the preferred e-leadership characteristics of nurses are more on physique attribute. This may be linked that in terms of social networking sites such as Facebook, physical attractiveness tends to have a positive name and it may increase friendship acceptance.[5] Physical attractiveness in combination with cognitive ability should be possessed by leaders to become successful in his career. Further, physical attractiveness leads to more opportunities and good evaluation results.[3] This implies that e-leaders must be decent at all times especially during teleconferences/videoconferences since some studies depicts that physical attractiveness matters as a good characteristic of leader.

Conclusion

AIT is currently considered a platform of among organizations and leaders in leading, motivating, competing, and communicating among their members, subordinates and competitors; hence, the term virtual leadership known as e-leadership was then identified as another innovative style that influences and maintains the connectedness among their associates in the institution where they are affiliated. Likewise, this study promotes prior notions that leaders, even at virtual spaces, are being acknowledged as an essential figure in leader-subordinate interaction.

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The relationship between level of knowledge and attitude towards behavior in choosing healthy snacks of 4th and 5th grade students☆

Estri Mailinda, Raja Fitrina Lestari*

School of Nursing, STIKes Hang Tuah Pekanbaru, Indonesia

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KEYWORDS
Knowledge;
Attitude;
Behavior;
Healthy Snacks;
Elementary school students

Abstract
Objective: Snacks of elementary school students have an important role in fulfill the adequacy of energy and nutrients for the growth and development of children. The objective of this research was to investigate the relationship between level of knowledge and attitude about healthy snacks towards behavior in choosing healthy snacks at the 4th grade and 5th grade students in a public elementary school in Pekanbaru.
Method: This research used descriptive correlational method with cross sectional approach. The data were collected from 74 samples by distributing questionnaires using simple random sampling technique with the variables were knowledge about healthy snacks and attitude about healthy snacks and choosing healthy snacks behavior.
Result: Most of students have good knowledge (68.9%) and have a negative attitude (55.4%) about healthy snacks and have good behavior (67.6%) in choosing snacks. There was no correlation between knowledge about healthy snacks and the behavior of choosing snacks (p value = 1000) and there was no relationship between attitude about healthy snacks and choosing snack behavior (p value = 0.369).
Conclusions: Elementary school teachers always need to control of all types of snacks that are sold in the school.

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* Corresponding author.
E-mail address: rajafitrinalestari@htp.ac.id (R.F. Lestari).

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Introduction

Food is a source of energy and various nutrients to support human life. But food can also be a vehicle for disturbing human health even can cause death. Healthy food must have nutritional value and be safe for consumed. According to the Minister of Health Regulation No. 033 of 2012, people need to be protected from the dangers of using food additives that do not meet health requirements. Food protection in case is an effort needed to prevent the possibility of contaminated food from biological, chemical and other contaminants that can cause harm and endanger human health. Lack of attention to this matter, has often resulted in the impact of a decline in the health of consumers, such as poisoning due to unhygienic storage and presentation processes.[1]

One aspect that plays an important role in providing energy and nutrition as well as maintaining learning resistance for children while in school is snacks. For 6–8 h/day the time the child spends at school and 90% of school children buy snacks at school. Snack food has good taste on the tongue, easy to get, attractive appearance and affordable price so many children like to buy snacks. However, this is inversely proportional to the quality of snacks, both in terms of the safety of the composition and the cleanliness that can endanger the health of children. The results of the initial survey in Pekanbaru 121 State Elementary School, researchers found a variety of snacks sold by vendors or food vendors of street outside the fence. The results of observations conducted by researchers that many school-age children who snack on food vendors outside the fence, especially during breaks and when they go home from school. Although there is already a healthy canteen at the school and a ban by the school for snacks outside the school fence, there are still many students who remain snacks outside of school.

Based on the background above, the researcher was interested in conducting a research entitled ''The Correlation between Knowledge & Attitudes about Healthy Snacks with Behavior in Choosing Food at 4th and 5th Grades in Public Elementary School 121 Pekanbaru''.

Results

Univariate analysis

Characteristics of respondents

Based on Table 1 showed that the majority of respondents are male as many as 40 students (54.1%).

Table 1 Frequency distribution based on gender of students at 4th and 5th Grades in Public Elementary School 121 Pekanbaru.

No.	Gender	*F*	%
1	Male	40	54.1
2	Female	34	45.9
Total		74	100

Table 2 Frequency distribution based on pocket money of students at 4th and 5th grades in Public Elementary School 121 Pekanbaru.

No.	Pocket money	*F*	%
1	Low (<Rp 6.000)	34	45.9
2	High (≥Rp 6.000)	40	54.1
Total		74	100

Based on Table 2 shows the majority of students' high school allowance amounts to 40 respondents (54.1%).

Research variables

Based on Table 3 it can be concluded that the majority of respondents have good knowledge about healthy snacks as many as 51 respondents (68.9%).

Based on Table 4 it can be concluded that the majority of respondents have a negative attitude about healthy snacks as many as 41 respondents (55.4%).

Based on Table 5, it can be concluded that the majority of respondents have good behavior in choosing snacks, as many as 50 respondents (67.6%).

Bivariate analysis

Correlation between knowledge about healthy snacks with behavior in choosing food

Table 3 Frequency distribution based on knowledge about healthy snacks for 4th grade students and 5th grade of Elementary School 121 city Pekanbaru.

No.	Knowledge	*F*	%
1	Less	23	31.1
2	Good	51	68.9
Total		74	100

Table 4 Frequency distribution based on attitudes about healthy snacks at 4th and 5th Grades in Public Elementary School 121 Pekanbaru.

No.	Attitude	*F*	%
1	Negative	41	55.4
2	Positive	33	44.6
Total		74	100

Table 5 Frequency distribution based on behavior about healthy snacks at 4th and 5th Grades in Public Elementary School 121 Pekanbaru.

No.	Behavior	*F*	%
1	Less	24	32.4
2	Good	50	67.6
Total		74	100

Knowledge	Behavior in choosing food				Total		*p* value
	Less		Good		*N*	%	
	n	%	*n*	%			
Less	7	30.4	16	69.6	23	100	1000
Good	17	33.3	34	66.7	51	100	
Total	24		50		74		

The results of chi square statistical tests obtained p value of 1000. The results of this study have a value of $\alpha > 0.05$ so that Ho was accepted, it is concluded that there was no correlation between knowledge about healthy snacks and behavior in choosing food.

Correlation between attitudes about healthy snacks with behavior in choosing food

Attitude	Behavior in choosing food				Total		*p* value
	Less		Good		*N*	%	
	n	%	*n*	%			
Negative	11	26.8	30	73.2	41	100	0.369
Positive	13	39.4	20	60.6	33	100	
Total	24		50		74		

The results of this study have a value of $\alpha > 0.05$ so that Ho was accepted, it is concluded that there was no relationship between attitudes about healthy snacks and behavior in choosing food.

Discussion

Univariate analysis

Characteristics of respondents

In this study it was found that the most respondents were 40 respondents of male (54.1%) because in each at 4th grade and 5th grade male students were more. According to Utami and Waladan's (2017) research, boys are more active in physical activities and sports, activities that cause boys to need a lot of energy. This energy is obtained by children from snacks purchased at school.[3]

Characteristics of respondents based on pocket money are known that most of the students are more than Rp. 6000 as many as 40 students (54.1%). The provision of pocket money gives influence to the child to be responsible and learn to manage the pocket money he has. Reasons that cause children to consume snacks more and more often are increasing the provision of snacks.[4]

Knowledge of healthy snacks

The majority of respondents are well informed about healthy snacks. This can be caused by the knowledge of snacks that have been delivered by the teacher in the elementary school. Children's knowledge can be obtained both internally and externally. Internal knowledge is knowledge that comes from itself based on the child's life experience. Externally knowledge is knowledge gained from other people including family, parents, and teachers. Knowledge gained both internally and externally will increase children's knowledge about healthy snacks.[2]

Attitudes regarding healthy snacks

The majority of respondents have a negative attitude about healthy snacks. This is because children are affected by friends who have a positive attitude toward snacks. A person's attitude will affect his knowledge. Attitudes can describe the reflection of a person's feelings in the form of positive and negative values on a particular object, where the attitude affects the actions of a person to achieve his goals.[7]

Behavioral in choosing food

The majority of respondents have good behavior in choosing food. This can be caused because the child's behavior is not spared from the attitude and knowledge he has. Food habits are part of the behavior in the form of real actions that become a pattern of behavior that tends to be difficult to change. School-age children have the habit of buying food they like. Children have a changing nature of food so that often children choose the wrong snacks especially if not guided by their parents.[3]

Correlation between knowledge about healthy snacks with behavior in choosing food

Based on the results of the research conducted showed there was no correlation between knowledge about healthy snacks and behavior in choosing food. Good knowledge does not necessarily guarantee that the child behaves well. Many things affect children in behaving. This is due to the child's knowledge factor. In general, the knowledge gained by children is limited to the basic knowledge of the school. Children only get knowledge about the function of food, nutritional elements of food, and washing their hands before eating, while as a result of consuming unhealthy snacks, consuming food that is not safe, does not have sufficient nutritional value, consuming snacks containing preservatives, flavorings excess and artificial sweeteners are not too emphasized, children only think that the snacks they eat can eliminate hunger so that in choosing snacks the child does not pay attention to the nutritional value found in the snack.[5]

School-age children have a high curiosity, especially in snacks, of course with curious, they always want to try snacks sold in the school environment without regarded to the nutritional content and the dangers of current snacks.[6]

Correlation between attitudes about healthy snacks with behavior in choosing food

Based on the results of the research, it was shown that there was no correlation between attitudes about healthy snacks and snacking behavior. Child behavior does not escape his attitude and knowledge. The results of research conducted show that the attitude of more negative children behaves well. This is because children who have a negative attitude are influenced by the environment, especially their peers. His attitude is positive in choosing snacks and arises the desire to taste the food eaten by his friend. The behavior that arises is imitating a friend even though it is not in accordance with the attitude he has. This is in accordance with the characteristics of primary school children who like

to imitate people around them including parents, teachers and peers.

Conclusion

The level of children's knowledge about healthy snacks, the majority of children have good knowledge that is equal to 68.9%. The child's attitude about healthy snacks, the majority of children have a negative attitude that is equal to 55.4%. As for the behavior of children in choosing food, the majority of children have good behavior which is 67.6%. The results of the chi square statistical test showed that there was no correlation between knowledge about healthy snacks and behavior in choosing food, with the acquisition of 1000 *p* values. Furthermore, the results of the chi square statistical test showed that there was no relationship between attitudes about healthy snacks and behavior in choosing food with the acquisition of *p* value 0.369.

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Maternal and child health services in Kuranji Padang City towards SDG's☆

Mitayani[a,*], **Zulmardi**[b]

[a] *Stikes Mercubaktijaya Padang, Indonesia*
[b] *Health Faculty of the University of Muhammadiyah West Sumatra, Indonesia*

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KEYWORDS
Services;
Health;
Mother and childs;
Kuranji;
Padang

Abstract Health is the first pillar in achieving SDG's goals in Indonesia, including health services for mothers, children, and adolescents, and the elderly. For this reasons research was carried out using survey, interview, and questionnaire methods, the data were analyzed qualitative descriptive of 843 women of productive age, consisting of fertile couples (PUS) 552 people, married 355 people, 29 pregnant women, 95 breastfeeding mothers, babies (age 0–1 years) 65 babies, toddlers (ages 1–5 years) 302 people, 479 teenagers, 405 elderly people, and health services. This research conducted in Kelurahan Korong Gadang Kecamatan Kuranji, Kota Padang held on January to March 2016. The results showed that the pregnancy distance of <2 years was 38%, pregnant women and disease sufferers were 6.9%, pregnant women had 93.1% prenatal care, pregnant women had TT immunization 51.7%, the menu of pregnant women was less protein 44, 8%, and PUS does not have family planning (KB) 40.6%. Meanwhile babies suffered from 48.8% fever and exclusive breastfeeding mothers only 29.2%. Other services are PUS not participating in family planning by 40.6%, children not to Posyandu 49.7%, and the habit of buying unofficial medicine 36.7%. The conclusion of the study shows that several indicators of maternal and infant health do not meet national averages, such as PUS not participating in the National KB number of 17.63%.

Background

The Declaration of Millennium Development Goals or MGD's contains eight objectives and eighteen targets in response to global development issues, all of which must be achieved in 2015, followed by SDGs (Sustainable Development Goals). Goals and targets in the health sector include gender health,

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* Corresponding author.
E-mail address: mitayani_dd@yahoo.co.id (Mitayani).

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empowering women, reducing maternal and child mortality. To achieve the SDG targets for health and welfare workers and clean water and sanitation, and enter the third pillar. For nurses, in particular they must increase the role of personalism, especially in the field of environmental health and community health care. Communities are social groups that live in a place, interact with each other, know each other and have the same interests and interests.[7,9] Community is a group of people who live in the same location under the same government, the same area or location where they live, social groups that have the same interest.[4] In order to realize optimal public health, public health care is needed, where community care itself is the field of nursing which is a combination of public health and supported by community participation that prioritizes promotive and preventive services on an ongoing basis without neglecting curative and rehabilitative services as a whole, through nursing process to improve the function of human life optimally so that it is independent in health efforts.[2] Increasing the role of the community aims to increase community support in various health efforts and encourage independence in solving problems.[8]

Communities as subjects and objects are expected to be able to recognize the community, take decisions in maintaining their health. The end of the main health service goals are expected to be able to independently protect and improve the health status of the community.[1,3] In Kuranji Subdistrict, one of the sub-districts in the City of Padang was obtained preliminary data on environmental and community health that lacked health standards and requirements. Such as environmental conditions in the Korong Gadang Village RW 01, 03 and 04 Kuranji Subdistrict, where it is seen that the community throws garbage in its place or burns it. The community does not use the landfill any more, this can be seen from the habit of throwing garbage out of place and in the area household waste is seen stacked in front of the house, does not burn trash, and often throws garbage into sewers/streams or rivers. This can be seen from the state of the gutter which is filled with waste not just flowing water. As a result, the flow of the sewage becomes clogged and this also causes a bad odor.[5,6] For this reason a field survey study related to community health in Kuranji Sub-district, Padang City was conducted. The aim of the research is to understand the level of environmental health and community health.

Methodology

The study was conducted in Korong Gadang Village, Kuranji District, Padang City in 2016. The research method was in the form of a field survey and used questionnaires to obtain data on environmental health and community health at the research site.

Results and discussion

The research location is in Kuranji Subdistrict, Korong Gadang Subdistrict, with borders, east of Kuranji Village. Korong Gadang Village, Kuranji Subdistrict consists of three RWs, namely RW 01, 03 and 04. From the observations, RW 01, 03 and 04 people have varied age groups consisting of age groups of infants, toddlers, school children, teenagers, adults, couples of childbearing age and elderly. In the morning at each RT young adult women are more visible than in other age groups, while the school age group is more visible in the afternoon. While the elderly group has more activities in mosques such as wirid. From the survey results, this school age group is more visible than other age groups, the composition of the population is more women than men, the nuclear family is more dominant and more fertile. Residents of RW 01 are not only inhabited by indigenous people. The number of family heads in RW 01, 03 and 04 Out of Korong Gadang is ±807 Family Heads. The number of houses in this study was 1356 men (48%) and 1494 women (52%) with a total population of 2850 people, with 807 households or heads of households. Age distribution consists of 47.2% under the age of 21 and 52.8% over the age of 22 with education attainment of 92.4% having the highest education of senior high school, only 7.6% having diploma and undergraduate education as in and Of all 807 houses consisting of 82% permanent housing, 18% semi-permanent with 98% of the house floor consisting of ceramics, cement, and planks, there are still 2% of floored houses.

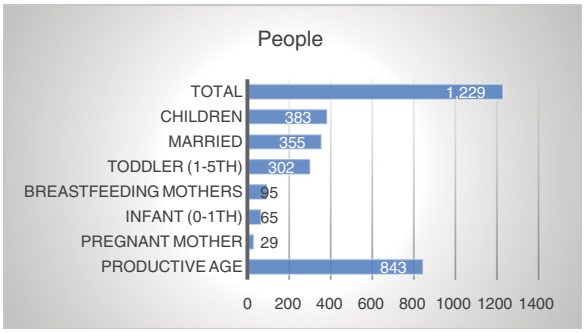

Figure 1 People distribution based on the maternal and child health in Korong Gadang Village, Kuranji Subdistrict, Padang City.

Maternal, infant and toddler health

There are three Posyandu, and one independent practice midwife in RW 03, the community does not use the posyandu that is usually held every month. In the RW 01 area, the elderly posyandu has been formed, while in RW 03 it has just been formed and the RW 04 posyandu has been formed for a long time but is not active. the number of elderly who visit posyandu is a little because the elderly have a busy life and generally the community in the village.

Maternal health services

Distribution of maternal and child health service and maternal data base on health services can be seen in Figs. 1–3.

Conclusions

There are several maternal, infant and toddler health problems in Korong Gadang Village, Kuranji Subdistrict, Padang City, namely:

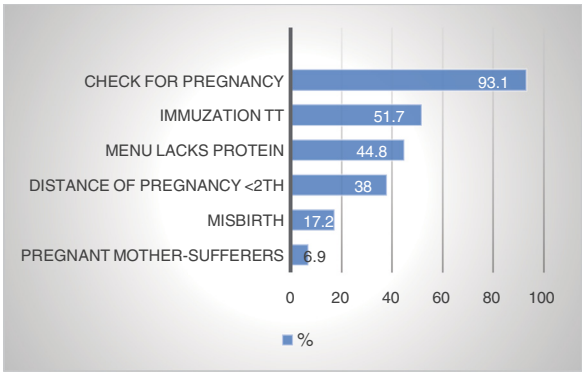

Figure 2 Maternal data based on the health services in Korong Gadang Village, Kuranji Subdistrict, Padang City.

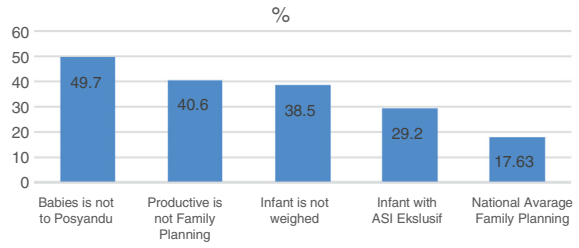

Figure 3 Several existing condition on health services in Korong Gadang Village, Kuranji Subdistrict, Padang City.

1. The lack of elderly numbers to the elderly posyandu with a percentage of 94.2%;
2. There are still babies who are not weighed by reason of long distance as much as 66.7%;
3. Habit of the community before treatment is to buy over-the-counter drugs with a percentage of 36.7%.

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Effectiveness of using sialang honey on wound bed preparation in diabetic foot ulcer☆

Sukhri Herianto Ritonga*, **Nanda Masraini Daulay**

Stikes Aufa Royhan Padangsidimpuan, North Sumatera, Indonesia

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KEYWORDS
Sialang honey;
Wound bed preparation;
Diabetic foot ulcer;
Wound bed score

Abstract
Objective: The aim of this study is to determine the effectiveness of sialang honey on wound bed preparation in diabetic foot ulcer.
Method: The study design was quasy experiment with one group pre test post test design approach. The sampling technique used was consecutive sampling, where respondents were selected based on the criteria that had been planned. Instrument used in this study was wound bed score, where the measurement results will be analyzed using Wilcoxon test with 95% confidence level.
Result: Result of this study was average wound bed score before intervention was 2.75 and became 9.25 after the intervention on a scale of 0–16. Wilcoxon test in this study obtained *p* value 0.011 with the conclusion that sialang honey had a significant effect on wound bed preparation in diabetic foot ulcer.
Conclusion: Statistically, honey can help the occurrence of wound bed preparation in diabetic foot ulcer.

Introduction

Globally people with diabetes mellitus (DM) in 2014 it was estimated at 422 million.[1] The pattern of increasing DM sufferers in Indonesia has a graph of the same increase that occurs on a global scale and in 2015 there were 10 million people with DM in Indonesia.[2] An increase in the number of DM patients who were not handled properly would be followed by an increase in the number of DM complications from the DM. 15% of people with diabetes would experience diabetic foot ulcer and up to 70% will experience amputation.[3]

Treatment of diabetic foot ulcer was still a difficult problem. However, wound care for diabetic foot ulcer was considered as one of the ways that could be carried out to reduce the number of amputations and even the number of deaths. The right treatment method for diabetic foot ulcer will improve wound healing.[4]

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* Corresponding author.
E-mail address: nerssukhri88@gmail.com (S. Herianto Ritonga).

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One of the wound care methods that could be used to improve wound healing is to maintain moisture at the base of the wound and prevent bacterial colonization. The wound care method was often known as the *moisture balance* method. *The moisture balance* method used dressings to maintain moisture in that the environment for wound healing could be maintained optimally.[5]

Honey is a natural liquid produced by honey bees from the flowers of plants or other parts of plants or the excretion of insects that have a sweet taste.[6] Honey is osmotic in that it contains almost 20% water. Honey properties like this can improve moisture balance in wounds and eventually can trigger *autolytic debridement* as one of the actions of *wound bed preparation*.[7]

The aim of the research

To determine the effectiveness of sialang honey on *wound bed preparation* in clients with diabetic foot ulcer.

Design of research

The design of research used was quasi-experimental approach *one group pre test and post test design*.

Population and sample

The population in this study were all patients with diabetic foot ulcer in Padangsidimpuan City. The sampling technique used is *consecutive sampling* where all diabetic foot sufferers can become a research sample if they meet the existing criteria and their acquisition within the prescribed time limit.

Measurement method

This research used observation sheet *wound bed score* (Fig. 1).

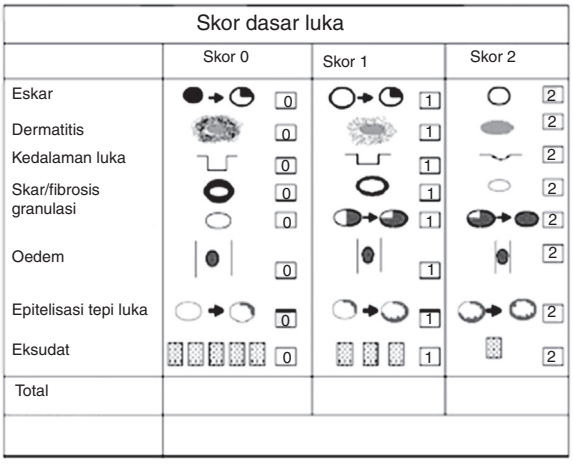

Figure 1 Wound bed score.

Table 1 Distribution of research subjects according to the duration of the injury and day of treatment.

No.	Univariate analysis	*n*	%
1	*The duration suffered wound*		
	1 month	5	62.5
	2 month	2	25.0
	3 month	1	12.5
2	Day of treatment	*n*	%
	The day 6	3	37.5
	The day 8	1	12.5
	The day 10	0	0.0
	The day 12	2	25.0
	The day 14	1	12.5
	>The day-14	1	12.5
	Total	8	100.0

Table 2 Distribution of research subjects based on wound bed scores before and after intervention.

No.	Wound bed score	Before		After	
		n	%	*n*	%
1	2	5	62.5	0	0.0
2	3	1	12.5	1	12.5
3	4	1	12.5	0	0.0
4	5	1	12.5	0	0.0
5	6	0	0.0	0	0.0
6	7	0	0.0	2	25.0
7	8	0	0.0	0	0.0
8	9	0	0.0	0	0.0
9	10	0	0.0	2	25.0
10	11	0	0.0	0	0.0
11	12	0	0.0	2	25.0
12	13	0	0.0	1	12.5
Total		8	100.0	8	100.0

The result

Univariate analysis

The analysis results were displayed in the form of frequency distribution tables and percentages (Tables 1 and 2).

Bivariate analysis

Bivariate analysis was conducted to examine the effect of sialang honey on wound bed score based wound bed preparation before and after intervention.

Based on Table 3 it could be concluded that sialang honey was effective in stimulating wound bed preparation in diabetic foot ulcer with *p* value of 0.011.

Discussions

Wound bed preparation would occur if the wound environment was balanced. To make the environment in the

Table 3 The effectiveness sialang honey toward *wound bed preparation* based on *wound bed score* respondent ($n = 8$).

No.	Wound bed score	Mean	SD	Significant
1	Before intervention	2.75	1.165	0.011
2	After intervention	9.25	3.370	

moisture wound balanced, in this study honey was used for being able to stimulate the occurrence of *wound bed preparation*.

Based on statistical tests it could be seen that honey could affect *wound bed preparation*. This was due to the content that honey has in that it could stimulate the *wound bed* preparation process

Honey was good for wound care is honey containing less than 20% water and less than 80% of honey content is sugar.[8,9] The combination of water and sugar makes honey osmotic and can provide an environment with balanced moisture in the wound. The wound environment with the balance of moisture will stimulate the occurrence of wound bed preparation.[8,9]

Moisture balance triggers macrophages to produce collagenase and protease which were responsible for debridement through the separation and breakdown of proteins that keep dead tissue in the wound. When the protein was solved, the dead tissue would separate and debridement occurs. This process was also stimulated by neutrophils which would increase when the *debridement* process occurs.[10,11]

The success of honey therapy in maintaining moisture balance in the wound was affected by the use of the right dressing. This study combines honey as a topical therapy with *gauze* which functions as absorbance and *transparent film* which functions as an occlusive dressing. This method can retain moisture balance in the wound. This method was also good for preventing the seepage of honey out of the bandage in that honey was easy to melt when in contact with wounds that were warm.

This method was chosen based on a reflection of the research conducted by Evans and Mahoney. In Evans and Mahoney's research, secondary dressing used was foam which had high absorbance properties, but in that of the high absorbance properties it resulted in reduced effectiveness of honey as a debridement agent. Honey which should be able to moisturize the wound base was absorbed first by the foam to reduce the effect of honey.[7]

This was consistent with the statement of Sussman and Bates-Jensen that this wound bed preparation could be obtained through dressing that can retain moisture. This moist wound surface supports the rehydration of dead tissue and wound fluid consisting of white blood cells and this enzyme would break down necrotic tissue.[12] Therefore with a combination of honey, gauze and transparent this film not only provides moisture but can also retain moisture.

Conclusions

1. The majority of respondents have suffered from diabetic foot ulcer for 1 month with a percentage of 62.5%.
2. The day of treatment needed to remove dead tissue (wound bed preparation) starts from the 6th day. But there was one respondent who until the 14th day wound bed preparation has not happened well.
3. After analyzing the data it could be concluded that sialang honey was effective in stimulating wound bed preparation in diabetic foot ulcer with a p value of 0.011.

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Effect of Tepid Sponge on changes in body temperature in children under five who have fever in Dr. Achmad Mochtar Bukittinggi Hospital☆

Hendrawati*, **Mariza Elvira**

Nabila Nursing Academy, Padang Panjang, Indonesia

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KEYWORDS
Body temperature;
Children under five;
Tepid Sponge

Abstract
Objective: The purpose of the study was to determine the effect of Tepid Sponge on changes in body temperature in children aged under five who had a fever in Dr. Achmad Mochtar Bukittinggi Hospital.
Method: This research is Quasi Experiment with one group pretest–posttest research design. Done at Dr. Achmad Mochtar Bukittinggi Hospital in April 2018. Respondents of children under five who suffered from fever were 12 people. Samples in Non-probability Sampling with Systematic Sampling. The kind of systematic sampling is type of sample based on the order of members of the population who have been given an even number starting from number 2. The statistical test used is paired sample *T*-test.
Results: Before being given Tepid Sponge all children under five experience high temperatures (100%) of 12 respondents, after being given Tepid Sponge one time gift, the temperature of all respondents becomes normal (100%). Statistical test results showed a significant effect of giving Tepid Sponge to changes in body temperature with $p = 0.000$ (≤ 0.05).
Conclusion: It can be concluded that there was effect of Tepid Sponge on changes in body temperature. Health workers are expected to provide Tepid Sponge for children under five who have increased body temperature.

Introduction

Fever is a condition of body temperature above normal as a result of increase in temperature regulator in the hypothalamus. Most of fever child, fever was a result of the change of heat center (thermoregulation) at hypothalamus. The diseases followed by fever could attack the system increasing the development of specific and nonspecific

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* Corresponding author.
E-mail address: hendrawati40@gmail.com (Hendrawati).

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immunity in recovering toward infection.[1] Fever in condition of rectal temperature development >38 °C (100.4 °F) or oral temperature >37.8 °C or axillary temperature >37.2 °C (99 °F).[2]

The fever handling could be done with pharmacological action non-pharmacological or both of them. Pharmacological action was giving antipyretics medicine[3]. One of non-pharmacological action is Tepid Sponge. Tepid Sponge is a procedure to increase the control of body temperature through evaporation and conduction which is usually conducted to the high fever client. The purpose of this action is to decrease the body temperature of hyperthermia clients.[4] By giving Tepid Sponge, it would be possible to have moist air flow and to help the release of body temperature through convection. The body temperature, which is hotter than air or water temperature will make the heat move to air molecules through direct contact with the skin surface.[5]

The giving of Tepid Sponge could be done by wiping of warm water to all clients body. The effect of giving Tepid Sponge are as follow: making vasodilatation of blood vessel, pores of skin, reduction of blood viscosity, improving metabolism, and stimulating impulse through skin receptor which sent to hypothalamus posterior to decrease the body temperature. The giving of Tepid Sponge could reduce 1.4 °C in 20 min.[6]

In Indonesia, till mid of December 2014, there were 2852 children who got fever in 34 provinces, 641 of them were dead, which lower than the previous year in 2013, namely 112,511 people and 871 of them were dead[7]. In 2015, there were 126,675 of children who got fever and 1229 were dead, which is higher than the previous year. The causes of these are the climate change and low attention to environmental cleanliness[8].

In West Sumatera, it was reported that there were 2282 cases and 12 children were dead (IR = 45.75 per 100,000 people and CFR = 1%) in 2014. At Dr. Achmad Mochtar Bukittinggi Hospital there were 104 children who got fever per year, 10 of them were dead in 2015, and in 2016 there were 301 children who got fever and 13 of them were dead[6].

Based on the previous survey conducted on December 7, 2017 at Dr. Achmad Mochtar Bukittinggi Hospital, it was found that there were 301 children who got fever in 2016, there were 25 children who got fever per month. Based on interview result with 6 parents, it was found that they used warm compress bye fever. They admitted that they did not know how to handle the fever with Tepid Sponge, researcher would like to introduce the Tepid Sponge as the instruments to decrease the body temperature effectively.

Method

This research is Quasi Experiment with one group pretest–posttest research design. Done at Dr. Achmad Mochtar Bukittinggi Hospital in April 2018. Respondents of children under five who suffered from fever were 12 people. Samples in Non-probability Sampling with Systematic Sampling. The kind of systematic sampling is type of sample based on the order of members of the population who have been given an even number starting from number 2. This Tepid Sponge has been done by wiping the entire body of the client with warm water.

The statistical test used is paired sample *T*-test. Before being given Tepid Sponge all children under five experience high temperatures (100%) of 12 respondents, after being given Tepid Sponge one time gift, the temperature of all respondents becomes normal (100%).

Result

Statistical test results showed a significant effect of giving Tepid Sponge to changes in body temperature with $p = 0.000$ (≤ 0.05).

Variable	Mean	SD	SE	*p*-value	*N*
Before Tepid Sponge	38.31	0.436	0.12	0.000	12
After Tepid Sponge	37.17	0.46	0.13		

Discussion

The research result using paired sample *T*-test showed that there was 38.31 °C of body temperature with deviation standard of 0.436 before giving Tepid Sponge. After giving Tepid Sponge, there was a decrease of body temperature namely 37.17 °C with deviation standard 0.46 and *p*-value 0.000 (*p*-value < 0.05). The result showed that there was significant difference of body temperature before and after giving Tepid Sponge toward the decrease of body temperature (*p*-value = 0.000). Ho was rejected and Ha was accepted, it means that there was significant effect of giving Tepid Sponge toward the change of body temperature.[9]

The research result was also in accordance with research conducted entitled ''The effect of Tepid Sponge toward the preschool child's body temperature who got fever at RSUD Sultan Syarif Muhammad Al Kadrie Pontianak''[10] with 16 respondents, using paired sample *T*-test and bivariate analysis result. The research result showed that there was the change of body temperature before and after intervention. The average body temperature before intervention was 38,288, while after intervention was 37,763.

The research conducted by Tito, 2014 entitled ''The comparison of tepid sponging and plaster compress in decreasing body temperature the child below 5 year who got fever at Puskesmas Salaman 1 Kabupaten Magelang, using independent *T*-test. The research with 15 children under 5 year who got fever showed that there was the average body temperature before giving plaster compress was 38.06 °C, while after giving plaster compress was 37.46 °C, with average body temperature decrease was 0.6 °C. The calculating using independent *T*-test, with *p*-value 0.002 and α (0.05) showed that there was a difference of body temperature of children under who got fever after giving tepid sponging and plaster compress. The average decrease of body temperature using tepid sponging was 1.09 °C while plaster compress was 0.06 °C. It was found that using tepid sponging was more effective in decreasing body temperature, because it gave large effects on human skin compared to plaster compress which focused on one point.[11]

Based on above theories and research result, the researcher analyzed that Tepid Sponge could influence the body temperature of children under five. The effects of giving Tepid Sponge were making vasodilatation of blood vessels, pores, of skin, reducing of blood viscosity,

improving metabolism, and stimulating impulse through skin receptor sent to hypothalamus posterior to decrease the body temperature through evaporation technique namely, to facilitate the displacement of body temperature. Each gram of evaporated water cause the loss of body temperature about 0.58 kcal units. In condition of individual without sweat, evaporation mechanism exists about 450–600 ml/day. In this condition, one of the ways of releasing the temperature was through evaporation.

Conclusions

It can be concluded that there was effect of Tepid Sponge on changes in body temperature. Health workers are expected to provide Tepid Sponge for children under five who have increased body temperature.

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Maternal age and anemia are risk factors of low birthweight of newborn☆

Juli Widiyanto*, **Geni Lismawati**

Faculty of Mathematics, Natural Sciences and Health, Muhammadiyah University of Riau, Indonesia

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KEYWORDS
Maternal age;
Anemia;
Low birthweight;
Newborn

Abstract Low birthweight is one of the risk factors that contribute to infant mortality especially during perinatal period. Low birthweight is still a worldwide problem because it is a newborn's death. in essence many factors that affect the incidence of low birthweight they are maternal age and anemia. The purpose of this study is to analyze the maternal age and anemia are risk factors of low birthweight newborn. This research is an analytic observational study with case control study. The sample of this study amounted to 32 cases and 32 controls. The instrument used observation sheet by looking at the data in Medical Record. The analysis used is bivariate with person chi-square test to see the maternal age and anemia are risk factors of low birthweight newborn. The result of this study proved maternal age affect as low birthweight newborn, evidenced by statistic analysis *p*-value <0.05 is 0.001 and Odd Ratio: 16.2 (Confident Interval 95%: 1.94–135.38), and anemia affect as low birthweight newborn, evidenced by statistic analysis *p*-value <0.05 is 0.001 and Odd Ratio: 6.3 (Confident Interval 95%: 3–13.198). The results of this study can be concluded that maternal age and anemia have affect of low birthweight newborn.

Introduction

Low birthweight is one of the direct causes of infant death, so it needs serious attention. Because low birthweight has specific mortality and consequent consequences that have psychological and neurological effects after a period of crisis and life that will eventually become a new problem in the family environment.[1] The literature study conducted by Villar, predicted the lunar monthly low birthweight rate in developing countries was 4 times greater than in developed countries, and this number increased 6.6 times in cases of moderately birth-weighted low birthweight (Intra Uterine Growth Retardation). Infant mortality in Indonesia is still high compared with other developing countries Infant Mortality Rate (MMR) is the number of infant deaths in the first 28 days of life per 1000 live births This figure

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* Corresponding author.
E-mail address: juliwidiyanto@umri.ac.id (J. Widiyanto).

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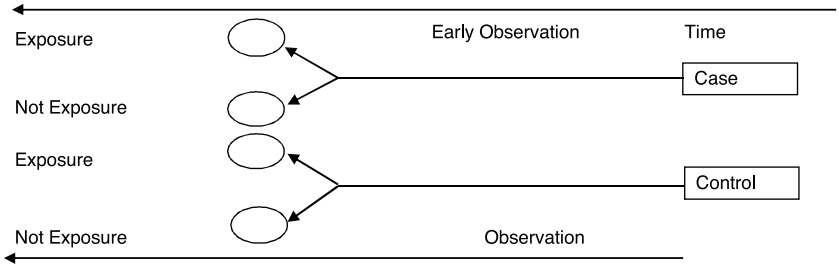

Figure 1 Case control study design.[5]

No	Maternal Age & Anemia	Low Birthweight		Total
		Yes	No	
1	(+)	a	b	a+b
2	(-)	c	d	c+d
	Total	a+c	b+d	a+b+c+d

Figure 2 Contingency table.[6]

is one indicator of the health status of the nation The high rate of infant mortality can be an indication that maternal and neonatal services are inadequate, therefore an effort is needed to reduce the Infant Mortality Rate.[2] Individual Survey Results of the IDHS in 2012 show that Maternal Mortality Rate in Indonesia reaches 359/100,000 live births and Infant Mortality Rate reaching 32/1000 live birth Mdan report data from regions received by Ministry of Health RI shows that the number of mothers who died from pregnancy and childbirth in 2013 reached 5019 people. While the number of babies who died in Indonesia reached 160,681 children. Child mortality tends to increase in 2007 reached 25.5% in 2010 reached 23.8% and in 2013 to 34.3%.[3]

Infant mortality is also affected by the following factors: maternal age and anemia. Age under 20 years and over 35 years old is considered a risk during pregnancy. Pregnancy at the age of less than 20 years of childhood pelvic and uterine and immature reproductive organs, over 35 years of age, the maturity of the reproductive organs decreases compared with the age of 20–35 years. Parity extensively includes gravid/number of pregnancies, premature/number of births, and abortion/number of miscarriages. While the lack of hemoglobin levels causes the blood to not send enough oxygen to the entire tissue, so the process of metabolism and the exchange of important nutrients in the tissues are disrupted. As a result, this situation will affect the pregnant woman and the fetus she contains. Anemia state will affect the baby who will be born.[4]

Material and methods

This research is an observational study. The research design used is Case Control Study,[5] a design which is a research design that measurement or observation done by way of determining cases and control then cekt backward variable treatment gradually. Research conducted measurements or observations about the relationship between the maternal age and anemia with the low birthweight of newborn. The purpose of study is to analyze maternal age and anemia are factors affect of low birthweight of newborn in RSUD Arifin Achmad Riau Province (Fig. 1).

The statistical test to be used is chi square test by calculating significance. The level of confidence is determined $p = 0.05$ with Confident Interval 95%: If the value $p > 0.05$ then the research hypothesis is rejected. If the value of $p < 0.05$ then the research hypothesis is accepted. Furthermore, it is also obtained a large value of risk (Odds Ratio, OR) exposure to the case by using table 2×2 as shown in Fig. 2.

Results and discussion

Based on the results of research that has been done in RSUD Arifin Achmad Province, can be illustrated in Table 1.

A. Maternal age

Based on the above table, it can be concluded that there is a significant relationship between maternal age with the incidence of low birthweight. This is evidenced by indigo *p*-value <0.05, that is 0.001 and age <20/>35 years are more at risk of 16.2 times for the baby experiencing low birthweight incidence when compared with the mother age 20–25 years.

The results of the above study are in accordance with the study of Tazkiah et al.,[7] that maternal age <20 and <35 years can significantly lead to birth of low birthweight (OR: 2.825; 95% CI: 1.37–5.823).

The study was also supported by the results of Karima and Achadi.[8] Research proving that there is a significant relationship between age and the incidence of low birthweight. Mother age <20 and or >35 years is at risk of 3.8 times to have low birthweight. When compared to mothers aged 20–35 years. The <20 years old mother's age has uterus and pelvis that have not grown optimally to reach adult size. As a result, the safety and health of the fetus in the womb is disrupted, so it can suffer from anemia, because it has to share red blood cells with the fetus conceived so women aged >35 years have a network of reproductive organs and physiological functions of the birth canal is no longer flexible, and found degenerative diseases in the mother's body so that the risk both to health and safety of the mother and to the baby conceived.

Table 1 Effect of maternal age and anemia of low birthweight newborn.

Variable		Low birthweight				*p* value	OR/CI 95%
		Case		Control			
		n	%	*n*	%		
Maternal age (n = 64)							
a.	<20/>35 Thn	11	34.4%	1	3.1%	0.001	16.2/1.94 – 135.38
b.	20–35 T	21	65.6%	31	96.9%		
Anemia (n = 64)							
a.	Anemia	26	81.3%	0	0%	0.001	6.3/3 – 13.198
b.	Not anemia	6	18.7%	32	100%		

Shaded values: risk factors of low birthweight newborn.
Definition of significant is valued significantly it the p-value < 0.05.

Pregnancy at <20 years or > 35 years of age is indirectly at risk for low birthweight occurrence because it is influenced by the competition of nutritional needs between adolescents whose immature organs and the fetus they contain and unpreparedness physically and mentally can cause the baby to be born with low body weight.[9] While maternal pregnancies over 35 years tends to lead to health problems such as hypertension, diabetes mellitus, anemia, etc., which tend to be an indicator of an unplanned pregnancy or unwanted pregnancy.[10]

B. Anemia

Based on the results of research that has been done to prove that there is a significant relationship between the amount of hemoglobin (Hb) with the occurrence of low birthweight it is evidenced by the value of *p*-value <0.05 is 0.0001. And OR: 6.3 with 95% CI: 3–13,198. This means that anemia mothers have a risk for their babies experiencing low birthweight incidence when compared to mothers with not anemia.

In contrast to previous research results indicate that the occurrence of low birthweight is related to the amount of hemoglobin (Hb) of pregnant women suffering from anemia disease during pregnancy until childbirth, this gives meaning of complication to the fetus and resulted in disturbance of gas exchange from mother of fetus, so that the absorption of O_2 and disrupted CO_2 expenditure in this case would be easy to occur hypoxic state in the fetus continues to asphyxia neonatorum in newborn.[11]

In pregnancy, physiological changes result in increased volume of fluid and red blood cells and decreased nutritional binding proteins in the blood circulation, as well as decreased micronutrients.[12] Increased blood volume occurs earlier than the production of red blood cells so that this condition causes a decrease in hemoglobin and hematocrit levels in the first and second trimester so if this is not followed by adequate intake or diet containing iron, the condition of anemia in pregnant women will cause nutrient disturbance and uterine oxygenation of the placenta resulting in impaired growth of conception results, so that fetal growth and development are inhibited and the fetus is born with low body weight.[13]

Anemia in pregnant women can also be caused by the intake of less nutritious foods, indigestion and malabsorption, iron deficiency in foods, increased iron demand during pregnancy, blood loss and complications during pregnancy and childbirth including chronic diseases.[14] In addition, this situation can also be caused by the habits of pregnant women who consume traditional medicine or herbal medicine because it contains oxalic acid, thiamine and filtrate that can interfere with the absorption of iron by the body.[11] Lack of hemoglobin (Hb) amounts will result in infant growth because blood can not deliver enough oxygen to the entire tissue. So that the metabolic processes and the exchange of important nutrients in the network is disrupted. The important function of hemoglobin (Hb) is its ability to bind oxygen easily, resulting in oxygen directly bound to be transported as oxyhemoglobin in arterial blood, and directly decomposed from hemoglobin (Hb) in the tissue. In venous blood hemoglobin (Hb) combines with io hydrogen produced by cell metabolism, so it can support excess acid.[15]

Conclusion

Based on the results of this study, it can be concluded that there are affect the maternal age and anemia of low birthweight newborn, the low or high maternal age is slightly increased risk of low birthweight levels 16.2 times when compared with those produced maternal age. And anemia is slightly increased risk of low birthweight levels 6.3 times when compared with those not anemia.

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Estimation of fetal weight (EFW) with hemoglobin levels during pregnancy at Pagar Dewa-West Lampung Province of Lampung☆

Aryanti Wardiyah[a,*], **Rilyani**[b], **Suryani**[c]

[a] *Malahayati Nursing Academy-Bandar Lampung, Indonesia*
[b] *University of Malahayati, Lampung, Indonesia*
[c] *Public Health Service (Puskesmas) Pagar Dewa, West Lampung, Province of Lampung, Indonesia*

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KEYWORDS
Estimation of fetal weight (EFW);
Hemoglobin levels;
Pregnancy

Abstract
Objective: To know the relation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung.
Method: Quantitative research type with cross sectional approach. The population in this study was all pregnant women at West Lampung area with a number of 70 respondents as total sampling technique. All respondents were be measured the levels of hemoglobin and Estimation of fetal weight. The statistical test used Chi Square test.
Result: The hemoglobin level of 70 respondents identified with category of anemia of 38 (54.3%) respondents and unanemia 32 (45.7%) respondents. Estimation of fetal weight found 40 (57.1%) respondents have a fetal weight in incompatible category with gestational age and 30 (42.9%) respondents had fetal weight in compatible category with gestational age, with *p*-value 0.000 (<0.05).
Conclusion: There was a correlation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung, with OR 8.250 which means that respondents who have low of hemoglobin (anemia) would be predicted eight times the risk of having estimation fetal weight incompatible with gestational age. Suggestions are expecting to increase awareness of pregnant women about the importance of routine pregnancy examination, as well as routinely consume Fe tablets and pay attention to nutritional intake during pregnancy.

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* Corresponding author.
E-mail address: aryanti@malahayati.ac.id (A. Wardiyah).

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Introduction

The incidence of anemia especially in pregnant woman in industrialized and developing countries is still quiet high. Reported by WHO in 2012 in developing countries who are suffering from anemia by 35–75% and an average of 56% in industrialized countries. However, most of the pregnant women who had anemia started from pre-pregnancy, with comparisons prevalence between pregnant and unpregnant such as 43% and 12%. Province of Lampung has a highest number comparing other province in Sumatra Island.[1,4] Reported in 15 Public health Service (*Puskesmas*) at west Lampung; Sumber Jaya 48 (23.5%), Bungin 56 (29.6%) Taman Cane 43 (33.6%), Fajar Bulan 38 (33.6%), Sekincau 49, (33.5%), Pagar Dewa 63 (43.5%), Batu Ketulis 50, (29.2%), Kenali 49 (21.7%), Bandar Negri Suoh 51 (24.5%), Srimulyono 48 (26.5%), Batu Brak 51 (28.5%), Liwa 60 (39.9%), Buy Nyerupa 40 (29.7%) and Lombok 40 (44.3%).[2]

Based on these data it is known that the prevalence of anemia at Public Health Service (Puskesmas) Pagar Dewa Health Center is the highest number compared to other public health services. Following that conditions in this year found postpartum hemorrhages has 4 cases and very low birth weight newborn has 4 cases.

The purpose of this study to know the relation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung.

Methods

Quantitative research type with cross sectional approach. The population in this study was all pregnant women at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung with a number of 70 respondents as total sampling technique. All respondents were be measured the levels of hemoglobin and Estimation of fetal weight. The statistical test used Chi Square test.

Results

Levels of hemoglobin of 70 respondents in anemia category of 38 (54.3%) respondents and unanemia 32 (45.7%) respondents (table 1). Estimation of fetal weight (EFW) of 70 respondents, in incompatible category of 40 (57.1%) respondents and compatible of 30 (42.9%) respondents with gestational age (table 2). The result of Chi Square statistic test obtained *p*-value 0.000 (<0.05) (Table 3).

Table 1 Distribution of frequency of hemoglobin levels in pregnant women.

Level of Hb	Total	Percentage (%)
Anemia	38	54.3
Unanemia	32	45.7
Total	70	100

Table 2 Distribution of frequency of estimation of fetal weight (EFW) with gestational age.

Estimation of fetal weight (EFW)	Total	Percentage (%)
Incompatible	40	57.1
Compatible	30	42.9
Total	70	100

Discussion

Chi Square statistical test results obtained *p*-value 0.000 (<0.05), this means that there was a correlation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung, with OR 8.250 which means that respondents who have low of hemoglobin (anemia) would be predicted eight times the risk of having fetal weight incompatible with gestational age.

Hemoglobin is composed of heme and protein globin elements, one of the heme forming components is iron (Fe). Iron is naturally obtained from food, can come from animals or plants. Iron from plants (non-heme) has a absorption capacity of 1–6%, lower than iron derived from animals (heme) which is 7–22%.[3]

Estimation of fetal weight with hemoglobin levels during pregnancy is a useful way to overcome the problem of pain and death during childbirth. The states that birth weight will affect the accuracy of labor delivery and its results so that it is expected to reduce mortality and pain in childbirth.[6] The pregnancy is an important of early life period. At that time the mother must prepare herself well to accept the birth of her baby. A healthy mother is expecting to have a healthy baby. One factor that influences maternal health is maternal nutrition. In addition to finding his own body's needs, various nutrients are also needed for the growth and development of the fetus in the womb, because nutritional

Table 3 Correlations between estimation of fetal weight (EFW) and hemoglobin levels in pregnant women.

Level of Hb	Estimation of fetal weigh				Total		*p* value	OR
	Incompatible		Compatible					
	N	%	*N*	%	*N*	%		
Anemia	30	42.9	8	11.4	38	54.3	0.000	8.250 (2.801–24.300)
Unanemia	10	14.3	22	31.4	32	45.7		
Total	40	57.2	30	42.8	70	100		

deficiency during pregnancy can have an adverse effect on the mother and child. Nutritional status of pregnant women greatly affects fetal growth in the uterus.[5]

In this study was finding 8 respondents with a history of anemia and gestational age/atheremic age (30–38 weeks) and having estimation fetal weight compatible with gestational age. That condition possibility when she was checked of hemoglobin in unfit due to tired and lack of rest.

10 respondents in normal levels of hemoglobin and estimation of fetal weight in incompatible category. It is caused gestational age is still young (29–33 weeks) at 29–30 weeks of pregnancy the fetus has not entered pelvic inlet and the size of the fetus is still relatively short, which is around 2300–2700 g, whereas at 33 weeks' gestation, anemic unappear. It can be caused by inadequate maternal nutrition, thus affecting fetal growth, the fetus in the uterus can obtain nutrients for growth and development through the mother, so if the mother experience poor nutritional status during pregnancy, can be discovered that fetal growth is also affected.

Conclusion

In summary, there was a correlation between estimation of fetal weight with hemoglobin levels during pregnancy at Public Health Service (*Puskesmas*) Pagar Dewa-West Lampung, Province of Lampung. Improving health services for pregnant women by health workers.

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Different triage categorization using Emergency Severity Index (ESI) method in emergency department☆

Mariza Elsi*, **Iswenti Novera**

Baiturrahmah Padang Nursing Academy, Indonesia

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KEYWORDS
Triage categorization;
Emergency Severity Index method in hospital

Abstract
Objective: Triage is basically a categorization process to prioritize various treatments for patients based on the types of disease, severity, prognosis and resource availability. However, the term triage is more appropriate to be used in the context of natural disaster or mass casualties. Within the context of emergency situation in emergency department, the term triage refers to a method used to assess the severity of patients' condition, determine the level of priority, and mobilize the patients to the suitable care unit. ESI is a new concept of triage using five scales in classifying the patients in emergency department. The real implementation of this concept demands nurses have to immediately make assessment about patients' condition right away, besides they must give their final decision, whether to move the patients to the ward or to let them leave the hospital.
Method: This research was done using Pretest–Posttest one Group Design, involving 21 nurses in the Emergency Department of RSUD Pariaman as research respondents. Before respondents were introduced to ESI method, their basic skills had been previously evaluated, which evaluation results were compared to the after-treatment results. A set of questionnaires consisting of 10 cases were used as research instrument.
Results: The result of this research showed that the value or rank difference between common triage and ESI triage categorization was positive (*N*). The mean rank was found at 11.00, while the sum of positive rank was 231.0 as shown in Asymp. Sig. (2-tailed) score of 0.00 lower than 0.05. Therefore, the null hypothesis was rejected.
Conclusions: There were differences in triage categorization before and after respondents were introduced to ESI method.

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* Corresponding author.
E-mail address: marizaelsi@gmail.com (M. Elsi).

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Introduction

Emergency Medical Service (EMS) has been said as the most crucial key entrance to a hospital. The number of patients referred or self-referring to the EMS is beyond precise prediction, to trigger a patient density and get the all the patients frustrated. In addition, such occurrence may also give impact to the patients' privacy and safety, which somehow brings frustration to the EMS employees.[1]

It is of necessity to find out an apt solution to deal with it, commonly named as triage plan. The implementation of the triage plan could be performed by means of a couple of methods of which principles refer to *airway*, *breathing*, and *circulation* or *primary survey*. To gain more accurate results of *primary survey*, *secondary survey* is supposed to be performed.

Most of Indonesian hospitals are still making use of classical triage system, to create a quick category with such colors as black, red, yellow, and green, which all were adapted from the triage system for disaster. This kind of system is deemed inappropriate to implement at the EMS of modern hospitals on the basis of evidence-based medicine. As the consequence, there exist some referral evidence-based triage systems, called as ESI (*Emergency Severity Index*) originated from the United States.[2]

ESI constitutes a triage concept to refer to 5 main scales in classifying the patients. After focusing on each of the levels, the patients will soon be referred by the nurses to get an immediate intervention based on the determined level (Figure 1).

In a study entitled ''*Validation of the Emergency Severity Index (ESI) in Self Referred patients in a European Emergency Department*'', there was illustrated a validity test for ESI algorithm on the patients referred and self-referring to educational and non-educational hospitals in Europe. In the study, as many as 42,000 patients from numerous hospitals were recruited as the sample of the study. In the first day, the nurses and doctors were taught about how perform ESI triage. As a result, the category of ESI triage used in performance had shown its reliability in examining seriousness level of disease the patients were suffering from.[4]

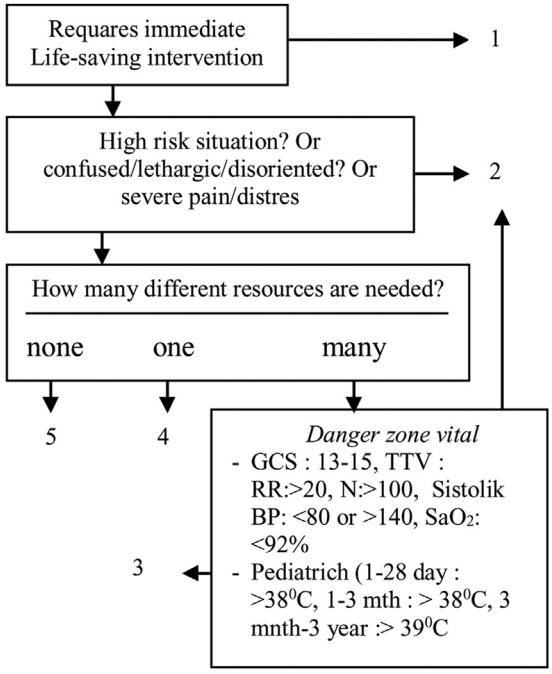

Figure 1 ESI algorithm to determine triage level.[3,9]

RSUD Pariaman (Public State Hospital of Pariaman) is one of the referral hospitals with large EMS room. However, based on the result of observation and interview with the Head of EMS of RSUD Pariaman, it was illustrated that the triage method they performed was still classical and had yet to fulfill the standards of procedure .[5]

The classical method, in this context, refers to a process of patient classification by determining level of immediateness by means of several colors, such as black, red, yellow, and green, which are all adapted from the triage system for disaster. A number of assumptions contend that this kind of system is not really appropriate to be implemented at the EMS of modern hospitals on the basis of evidence-based medicine. On the other hands, ESI would be much easier to be implemented in Indonesia due to inexistence of specific limit of time which has to be strictly determined for each the level. Additionally, ESI does not merely consider diagnosis for the sake of determining level of triage. For this reason, the research was of good interest to conduct a research about ESI method for triage categorization.

Method

Pre-test and Post-test One Group design with *t* dependent analysis was stipulated as the research design.[6] In this current research, there was a group of respondents, to be given an understanding on ESI method by means of algorithm. To measure, questionnaire was used, to include 10 cases. Before given the understanding, their prior understanding was measured as a referral information. Later, after they

Table 1 Respondents' characteristics.

	Categories	Frequency	%
Ages	26–30 years old	17	81.0
	31–37 years old	4	19.0
	Total	21	100.0
Background of education	D3 nursing	1	4.8
	S1 nursing	5	23.8
	Nurse	15	71.4
	Total	21	100.0
Working experiences	1–2 years	8	38.1
	3–4 years	8	38.1
	5–6 years	5	23.8
	Total	21	100.0

Table 2 Analysis of triage categorization before and after given understanding on ESI method.

	N	Mean rank	Sum of ranks		After–before
Before–after					
Negative ranks	0(a)	.00	.00	*Z*	−4.044(a)
Positive ranks	21(b)	11.00	231.00	Asymp. Sig. (2-tailed)	.000
Total	21				

received the holistic understanding, they were going to re-measured, by using the same measurement.

Result

Alluding to the result of the result on 21 nurse respondents assigned at the EMS of RSUD Pariaman as shown in Tables 1 and 2.

Based on abovementioned table, it had been evidently identified that the difference between the negative and positive ranks for the triage categorization in the hospital by means of ESI method signified positive (*N*). The mean rank signified 11.00, while the sum of rank constituted 231.0. In conclusion, based on the Asymp. Sig. (2-tailed), it was evident that 0.00 < 0.05; thus, 0 hypothesis was rejected. It could be said that there was a difference of triage categorization before and after given the understanding on ESI method.

Discussion

Response time at the EMS constituted a quality indicator for hospital service. The time the patients need in order to receive an immediate medical treatment, from the doctors or nurses, since their arrival at the EMS constituted 5 min long. The difference in categorization would affect the service immediateness and given intervention.

The ability for quick diagnosing and response would save the patients' life from their illness or injuries. The nurses were responsible for determining the service priority. In addition, immediate service at the EMS and priority setting were also determined by several factors, such as number of visits, nurses' skills, tools and other assistive components.

Based on the research of Sumardiko,[2] the real concept of ESI triage was much more applicative to implement since the assessment did not take too long time. In addition, the ease of interventive referral based on the ESI classification had been elaborated at the guideline of ESI triage. Another benefit of ESI triage was to create an immediate identification for the patients with the need of medical treatment by giving a quick response after determining the level.

Triage was performed by the experienced nurses in the room of triage. The patients would be fast treated by the professional nurses in the room of it. The quick and accurate triage performance required the qualified nurses with a good background of education, experience, and great qualification.[7]

In general, the patients had to receive an initial treatment before getting categorized in what level they should be belong to. In other words, the nurses had to know the condition or situation that may occur generated by the diseases the patients were suffering from. Further, the nurses were to measure and make a judgment on the patients' condition, whether or not they should receive a further treatment (observation), repatriation, or migration to another medical room.

This was in line with the theory of nursing for emergency situation proposed by Orland, which pinpointed more on the quick response or immediate action from the nurses upon the patients when the arrive at the EMS.[8]

Conclusion

The working procedure of ESI application had been guided by means of algorithm, which, further, was referred to the expected intervention. The triage categorization had been performed on the 10 cases given. The research, moreover, showed that there was a significance of triage categorization before and after given an understanding about the ESI method.

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The experiences of test re-takers in taking the Indonesian Nursing Competency Examination (INCE): A phenomenology study☆

Siska Mayang Sari*, **Dewi Kurnia Putri**

Nursing Program of Sekolah Tinggi Ilmu Kesehatan Hang Tuah Pekanbaru, Indonesia

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KEYWORDS
Experience;
Re-takers;
Indonesian Nursing Competency Examination (INCE)

Abstract
Objective: This study aims to explore the experience of test re-takers in taking the Indonesian Nursing Competency Examination (INCE) located in Nursing Program of Hang Tuah Institute of Health Science, Pekanbaru.
Method: This qualitative study used a phenomenology approach. There were 5 re-takers who failed to pass the INCE as the participants in this study taken by purposive sampling. Data were collected by in-depth-interview and were analyzed with Colaizzi method.
Result: This study found that the re-takers experienced some psychological responses every time they took the INCE; they prepared for the next INCE, had obstacles in the INCE process, tried to answer all questions, and had hopes related to the INCE organizers.
Conclusion: It is recommended that the nursing program of Hang Tuah Pekanbaru Institute of Health Science provides several preparations for nursing students to face the INCE, such as joining the government schedule of INCE try-outs and making additional try-out programs for the students.

Introduction

According to article 2 of the Minister of Health Regulation 1796/Menkes/Per/VIII/2011 concerning the registration of health personnel in lieu of Permenkes no. 161 of 2010, the graduation of a competency test is proven by a competency certificate as a requirement for health workers to be

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* Corresponding author.
E-mail address: siska_myg@yahoo.com (S.M. Sari).

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registered as nurses and allowed to carry out their profession as a nurse.[1]

The Indonesian Nursing Competency Examination (INCE) is a test conducted after students complete all nursing professional education series. INCE graduation data issued by Ristekdikti shows that the number of those who have graduated reached 57.81% in July 2014 it. Yet, it decreased to be 46.2% in November 2014. Then, Masfuri in his research reported that in 2015 there were 66,687 graduates (DIII and Nurses) who underwent examinations and only 35,892 graduates (53.8%) passed the competency exam. These data show that the INCE graduation rate is still low in national level, which is still below 75%. In addition, Masfuri also stated that there was a relationship between accreditation and the passing of competency exams.[2]

Every institution really wants to get a good accreditation. Therefore, they should carry out various efforts to overcome the low graduation rate of competency examinations. One of the first steps is to identify the obstacles experienced by the test participants in taking INCE as an evaluation of the failure of INCE graduation.

The obstacles faced by nurse graduates in taking INCE include the feeling of confusion and anxiety, inadequate knowledge of INCE procedures, stagnation of answering questions, and in dealing with computer screen brightness and frequent computer errors.[3] This result is in line with Abdillah's study which states that there is a correlation between participation in try-outs, Grade Point Average (GPA), learning styles and s INCE graduation.[4]

From the entire INCE periods which have been followed by nurse graduates from nursing program of Hang Tuah Pekanbaru Institute of Health Science, there were 18 graduates who did not graduate from the INCE, of which four of them had attended the INCE four times; four of them had attended the INCE twice; and seven of them were new test takers. While two persons did not join INCE. Because of the low rate of the INCE graduation from nursing program of Hang Tuah Pekanbaru Institute of Health Science, it is considered that there must be a research project to find out the problems faced by graduates, especially re-takers in taking the INCE.

Method

This research was a qualitative research using a phenomenological approach. Participants in this study were all nursing alumni of nursing program of Hang Tuah Pekanbaru Institute of Health Science who had not yet passed the INCE, consisting of 5 people selected using purposive sampling technique. Data were collected by using in-depth-interview method. Data analysis used in this study is the *Colaizzi* method.

Results

1. Characteristics of participants

The number of participants in this study was five people (one male and four females). The graduation year of the participants in this study is between 2014 and 2016. Participants' job includes private employees, nurses and housewives. All participants in this study have taken INCE, including three people who have done it nine times and the other two did it five times. Participants in this study were guided by the inclusion and exclusion criteria that the researchers have determined previously, including nursing student alumni who have taken INCE (Table 1).

2. The research themes

From the results of the re-takers' experience in taking part in the INCE, five main themes were produced as can be seen in the following theme matrix table (Table 2).

Discussion

1. Re-takers' psychological response in taking INCE

The re-takers' psychological responses in taking INCE in this study were in the form of low self-esteem, the emergence of a stressful response to feeling helpless, not confident because of repeated tests. INCE is a test that has more stressors than other exams. The level of anxiety experienced by each individual when facing a test was different. The anxiety of the INCE exam will affect the performance of participants which is manifested by the acquisition of scores. Value or test results are a source of test anxiety as a form of individual perception of the test situation.[5]

2. Preparation to follow INCE

The preparations made by re-takers in taking INCE in this study were learning by reading textbooks and online books and asking the more experienced ones. This was done as an effort to reiterate or recall the knowledge that had been obtained during the study or during field practice. This strategy is in line with one of advice in the successful strategy book to face competency tests suggesting that one of them is to make a learning plan. In learning plan, they have to consider the topic, the length of time needed and the goals

Table 1 Characteristics of participants.

No.	Participant code	Sex	Graduation year	Occupation	Times following INCE
1	P1	Female	2016	Private Employee	9 times
2	P2	Female	2016	Nurse	5 times
3	P3	Female	2014	Housewife	9 times
4	P4	Female	2014	Housewife	9 times
5	P5	Male	2016	Nurse	5 times

Table 2 Matrix themes experiences of re-takers in following INCE.

No.	Theme	Subtheme	Category
1	Psychological responses of re-takers in taking INCE	Low self-esteem	Unable Not confident
		Stressful responses	Stress Shock Aflutter
2	Preparation to follow INCE	Learning through *text book*	Buying books Read copied books
		Learning through *online* media	Find on internet
		Learning through experienced persons	Discussion Following try out
3	Obstacles in taking INCE	Time limit in answering questions	1 question/1 min Lack of time
		Hard to understand the questions	The questions are confusing
4	Re-takers' Strategies in answering INCE questions	Skip the difficult questions	Skip the questions
		Make a sensible guess	Answer carelessly Answer based on instinct Guessing
5	Hopes related to INCE	Institution education	Prepare try-out at campus
		Organizing team of INCE	Whitening Add more time

to be obtained.[6] The topics that must be mastered in INCE are nursing care in the field of medical surgical nursing, pediatric nursing, maternity nursing, mental nursing, family and gerontic nursing, emergency nursing and management nursing.

3. Obstacles in taking INCE

Regarding the obstacles that were felt by re-takers in taking INCE, the participants reported that most of them were concerned with limited time to work on questions and very long questions. The total items of INCE questions were 180 items with time provided for 180 min (3 h). The type of question is *multiple choices* with 5 alternative answers (A, B, C, D and E). The form of the problem is made with a case (vignette), which describes the real conditions encountered daily in nursing services. The questions are arranged and designed in the blue print of INCE questions. Blue print is a basic framework which is a guideline used to design the development of exam questions which ensure that nursing care provided is safe and effective and describes the main character of the nurse that is expected by the users.

Re-takers felt that 180 min (3 h) provided were not enough to answer all questions. Because the exam questions were difficult to understand, many re-takers guessed the answers. This finding is also in line with the research of Kholifah and Kusumawati that the obstacles experienced by INCE participants include experiencing confusion, anxiety, inadequate knowledge of INCE procedures, stagnation in answering questions, computer screen brightness, and frequent computer errors.[3]

In this study, the lack of understanding of re-takers about INCE questions as one of the obstacles could also be exacerbated by the psychological condition of the re-takers when taking the exam. When re-takers felt anxious and there was no confidence, so this would make the re-takers lack of the ability to understand the problem and answer the questions. The increased anxiety will affect concentration in answering questions. Another study by Lavin and Rosario-Sim found that anxiety risks influencing NCLEX-RN results.[7] There is a need for anxiety test counseling interventions and structured mentoring of nurse graduates to avoid failures in NCLEX-RN.[8]

4. Re-takers' strategies to answer INCE questions

The next issue of re-takers' experience in taking INCE was about their strategies in answering the INCE questions. Some strategies they have applied include skipping difficult questions and guessing the answers. This activity should not be experienced by them if they had confidence in answering questions. Determining the choice of answers should be confident because the questions given were in accordance with the competence of graduates. The results showed that graduates often hesitated in determining answers. These data were supported by another research project conducted by Wiles that poor performance during the NCLEX-RN process was one of the failure causes.[9]

5. Hopes related to INCE

The last theme regarding the experience of the re-takers taking INCE was about their hopes for INCE institutions and organizers. They expect that the educational institutions to conduct INCE Try-Outs before the real test. The INCE T-O activity itself has been carried out by nursing program of Hang Tuah Pekanbaru Institute of Health Science which follows the schedule of the central AIPNI. INCE T-O was conducted with the aim of providing initial experience of INCE participants in dealing with the INCE exam system and

questions. Of course, this experience is expected to be an early learning before taking the real INCE. But, in this study, re-takers did not join INCE T-O. Participation in INCE T-O itself has a relationship with the graduation of INCE exam participants in accordance with the research conducted by Lukmanulhakim and Pusporini that the participation of students in INCE T-O has an influence on INCE graduation with p value = 0.000.[10]

Meanwhile, their expectation for the central INCE organizer is that the exam time should be extended. For INCE questions with 180 items, the current time provided for 180 min (3 h) is considered to be not enough. The type of question is multiple choices with 5 alternative answers (A, B, C, D and E). The form of the problem is made with a case (vignette) which describes the real conditions encountered daily in nursing services. This provision is determined based on the results of research conducted by Nursery education experts who are members of the HPEQ-DIKTI in 2011–2012. Therefore, it needs to be considered for further research by DIKTI regarding the time to answer INCE questions so that it can improve INCE graduation.

Conclusion

The re-takers of INCE in Nursing Program of Hang Tuah Pekanbaru Institute of Health Science have experienced some psychological responses in taking INCE. They have made some preparations in facing INCE. Yet, they still faced some obstacles in taking INCE. For this, they have applied some strategies in answering INCE questions. They have also proposed some expectations to several parties in taking INCE in the future, including to institutions (Nursing Program of Hang Tuah Pekanbaru Institute of Health Science) and the central INCE organizing team.

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