Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

The Relationship between Dialysis Adequacy and Fatigue in Patients on Maintenance Hemodialysis

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Submitted: 20-03-2019 Accepted: 06-01-2020 Published: 01-04-2020

Abstract

Fatigue and inadequacy dialysis are common problem in hemodialysis patients. The dialysis inadequacy can cause an increased progression of impaired renal function, as well as the increased morbidity and mortality, and declining productivity of hemodialysis patients. Fatigue prevalence ranged from 44,7–97% from mild to severe. Fatigue is a common complaint of hemodialysis patients that can lower physical function and life quality. To determine the correlation between adequacy and the fatigue level of the patients with End Stage Renal Disease (ESRD) undergoing hemodialysis. This study used a descriptive analytic and cross sectional approach involving 75 respondents and the FACIT-G Questionnaire was used to collect the data. The inclusion criteria are male and female patients aged 18–70, undergoing hemodialysis for more than 3 months with a frequency of 2 times at least 4 hours, composmentis patients. The adequacy hemodialysis was assessed using the Kt/V formula. All data were collected during the session of hemodialysis. Pearson Product moment test wes used to analyze the data. The mean dialysis adequacy was 1.43±0.380, 57(76%) only 13 (17.3%) patients had adequate dialysis (minimum laboratory standard Kt / v = 1.8) and inadequate were 62 (82.7%) patients. The mean of fatigue was 20.07 and 62 (82.7%) respondents experienced severe fatigue. There was no significant correlation between adequacy and the fatigue level of the patients with ESRD undergoing hemodialysis with p value 0.504 ($\alpha > 0.05$). Mostly patients had inadequate dialysis, both adequate and inadequate dialysis patients had experience fatigue from mild to severe. Multiple individuale and personnel factors affect dialysis adequacy directly or conversely.

Keywords: Dialysis adequacy, End Stage Renal Disease (ESRD), fatigue.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

Dialysis adequacy is an adequate dosage of hemodialysis recommended for evaluating the effectiveness of hemodialysis. There a positive correlation between dialysis dose and normalized protein catabolic rate, hemoglobin, serum albumin, and physical health. Nowadays a great percentage of patients had inadequate HD. The duration and frequency of dialysis session, patients' complaints, and well-functioning vascular access is a several factors were influenced of HD adequacy ((El-Sheikh & El-Ghazaly, 2016), also BMI and type of heparinization (Chayati, Ibrahim, & Komariah, 2014). Inadequate hemodialysis may also result in losses and the declining productivity of hemodialysis patients. End Stage Renal Diseases (ESRD) patients undergoing hemodialysis takes 12–15 hours of dialysis every week, or at least 3–4 hours for each treatment with 2–3 times of dialysis per week schedule. This activity will take place continually throughout his life (Smeltzer, Bare, Hinkle, & Cheever, 2010).

Based on Perhimpunan Nefrologi Indonesia (PERNEFRI) Consensus (2017) and National Kidney Foundation (NKF) (2015) the measurement dialysis adequacy (Kt/V) for three times weekly of Kt/V is considered sufficient when it is greater than or equal to 1.2 and 1.8 for hemodialysis twice times weekly. Some of the factors affecting the dialysis adequacy are solute or molecule, the patient and the dialysis process itself (Yeun, Ornt, Depner, Chertow, 2015), also BMI and type of heparinization (Chayati, Ibrahim, & Komariah, 2014). There are nine factors that directly affect the measurement of dialysis adequacy in hemodialysis patients, surface area dialyzer, hematocrit, weight (body mass index/BMI), duration of sessions of hemodialysis, type of vascular access, frequency of hemodialysis in a week, the speed of blood flow, ultrafiltration average, and kind of heparinisation. The relationship between Kt/V and URR revealed that all patients with spKt/V ≥1.2 had URR ≥65% There statistically strong correlation between URR and eKt/V ($P < 0.001$) (El-Sheikh & El-Ghazaly, 2016). The result of multiple linear regression analyses suggested that sleep disorder, poor social and family functioning, comorbidity, exercise less than one hour every day, Kt/V <1.2 and high creatinine serum contribute were (Wang et al., 2016).

Increasing Quick Blood (Qb) can increase the achievement of hemodialysis adequacy. Inappropriate dialyzer and Low Blood Flow Rate (BFR) choice were the leading causes of inadequate dialysis (Nafar et al., 2017). The main obstacles to achieving an adequate dialysis dose are the type of catheter used, female sex, old age, greater body weight, shorter dialysis time and lower quick blood (Maduell et al., 2016). The most influencing factors on the value of Kt/V and URR is the surface area of the dialyzer (Amini et al., 2011). Many patients undergoing hemodialysis complaint about muscle weakness, lack energy and fatigue and the main problem is fatigue in maintenance hemodialysis. Previous studies showed that the prevalence rate of fatigue rates among hemodialysis patients range from 44.7–97%, the level of fatigue experienced is from mild to severe level (Sulistiani, Yetti, Hariyati, 2012; Horigan, J., Khakha., Mahajan, 2012; Biniaz et al, 2013; Gorji et al, 2013; Sodikin and Suparti, 2015). Fatigue is caused by physical inactivity and emotional distress (Horigan, et al., 2012). Fatigue is a serious problem for patients on hemodialysis. Low serum albumin values, presence cardiovascular disease, depressive symptoms, poor sleep quality, excessive sleepiness and restless leg syndrome are independently associated with greater fatigue in the multivariable regression model. The FACIT-F score was closely correlated with the SF-36 vitality score ($r = 0.81$, $p < 0.0001$) (Jhamb et al, 2013). Consequences of fatigue experienced by hemodialysis patients are socialization inhibition, a feeling of being isolated, losing time with family and the difficulty of activities, worsening life quality, and reducing life survival (Horigan, 2012).

One study in RSUD Margono Soekarjo indicates the general conditions like being weak, thin body, high blood pressure, anemia, itchy skin, darker skin color, decreasing appetite and experiencing nausea. These conditions an represent inadequate dialysis (Yeun, Ornt, Depper, 2015). The Previous research by Septiwi, Yetti, and Gayatri (2011)

in hemodialysis room of Margono Soekarjo hospital investigated the correlations between hemodialysis adequacy and life quality found among 101 respondents, they were 42.6% obtained hemodialysis adequacy while 57.4% did not. There is a correlation between the Quality of life and hemodialysis adequacy. Patients who got adequacy hemodialysis had 10.6 times of better life quality those who dis not. Research by Sodikin and Suparti (2015) described that the fatigue level of hemodialysis patients was predominantly moderate (67%), mild (16.5%) and severe (16.5%). However this research did not discuss the relation between the adequacy of hemodialysis and fatigue level, so the objective of this study was to determine the correlation between the hemodialysis adequacy and the fatigue levels of ESRD patients undergoing hemodialysis.

Method

This research was a correlational descriptive study through cross sectional approach with 75 participants recruited using purposive sampling in Hemodialysis Unit of Prof Dr. Margono Soekardjo Hospital in Purwokerto city, Banyumas Regency Indonesia. We used total purposive sampling technique, all patients who did hemodialysis 2 times per week there were 100, 69 patients had AV shunts and 32 patients had femoral access. But participants who are willing and meet the criteria are 90 patients. The criteria inclusions participants were men and women aged 18 –70 years, undergoing regular hemodialysis ≥3 months with a frequency of at least 2 times a week hemodialysis, able to reading and writing in Indonesian, undergoing hemodialysis process at least 4 hours. The patients were excluded with mental disorders.

The questionnaire used is a demographic questionnaire respondents, and the adequacy of hemodialysis was measured using the formula Kt/V observation sheets and questionnaires of Functional Assessment of Chronic Illness Therapy (FACIT G) to measure the level of fatigue created by Kathleen F. Tennant (2015). The questionnaire is devoted to the management of patients with chronic diseases that have been translated and tested for validity in many countries so there are many versions, including Indonesian. The Validity test showed that all of the questions were valid because r count was bigger than r table=0.279 (by Pearson correlation test) and reliable because of r11=0.646>0.6 (by Cronbach's alpha test.). The Indonesian version of the FACIT Fatigue Scale was a brief and valid to monitor important symptom and its effect on Chronic Kidney Diseases patients with routine hemodialysis (Shihobing et al., 2016).

To be able to use these questionnaires, investigators requested a permission from the FACIT-G, FACIT Fatigue Scale consists of 13 statements with a score range of 0-52. The assessment mentions that the higher the score ≥ 30, the less fatigue and a good quality of life, the lower the score below 30 indicates severe fatigue. To determine the achievement of dialysis dose researchers used guidelines PERNEFRI (2017) and NKF (2015) to measurement dialysis adequacy (Kt/V), for three times weekly of Kt/V is considered sufficient when it is greater than or equal to 1.2 and 1.8 for hemodialysis twice times weekly. The ethical clearance of the research was obtained from the ethics department of Prof Dr. Margono Soekardjo Purwokerto Hospital (No: 420/15897/VI/2016).

The research data was taken on July-August 2016 by researchers, all the patients who have been described and willing to become respondents, then signed informed consent and fill out a questionnaire. Researchers conducted observations on hemodialysis activities and recorded the results of lab measurements, then calculated the hemodialysis adequacy with the Kt/V formula. From 90 questionnaires given, only 85 returned and 10 did not complete questionnaire. All data were analyzed using SPSS software version 16, with a significant p value <0.05. The data analysis was conducted by calculating the univariate including frequency distribution and bivariate analysis used pear test on product moment with 95% confidence level. The results of the normality test using Kolmogorov-Smirnov Z showed that data were normally distributed, the score of hemodialysis adequacy variables was 0.686 and fatigue was 0.146, so the bivariate analysis used the Pearson product moment test (Dahlan, 2014)

Results

A total number of 75 patients were included, 52% of them were males and 48% were female. More than half of them (69.3%) had low education level, were married (70%). The most access used is the Arterio Venosus (AV) shunt as much as 73.3% and 98.7% of respondents are anemia (Table 1). Based on the results shows 81.23% patients achieve adequate dialysis and the most respondents 62 (82.7%) experienced a severe fatigue.

The mean average of dialysis adequacy was 1.42 and fatigue is 20.07 (table 2), which means experiencing severe fatigue, when viewed in the distribution of 82.7% (62) of respondents with scores ≥ 30, in this study used a questionnaire Facit-G Version 4 with a

Table 1 Distribution of Respondents According to Gender, Education, Occupation, Marital Status, HD Access and Hemoglobin Levels

Variable	Frequency (f)	Percentage (%)
Sex		
Male	36	52
Female	39	48
Education		
Low	52	69.3
High	23	30.7
Marital Status		
Mariied	70	93.3
Unmarried	5	6.7
Profession		
Working	55	73.3
Jobless	20	26.3
Hemodialysis Access		
AV shunt	55	73.3
Femoral	20	26.3
Hemoglobin Category		
Anemia	74	98.7
Non Anemia	1	1.3

Table 2 The Frequency Distribution of Respondents by Qb, Age, HD Duration and Dialysis Adequacy

Variable	Mean	Med	SD	Min-MAx
Quick Blood	284.03	250	37.783	200–300
Ages	49.11	50	11.681	22–73
HD Duration	24.45	22	18.789	1–108
Dialysis Adequacy	1.42	1.39	0.380	0.61–2.84
Fatique	20.07	19	5.78	10–32

Table 3 Correlation between Dialysis Hemodialysis Adequacy and Fatigue Level (n=75)

Variable	p	r
Dialysis Adequacy	0.504	0.078
Fatigue		

total score of 0–52. The assessment mentions that the higher the score show, the less fatigue and better quality of life, the lower the score below 30 indicates severe fatigue. The minimum research score is 10, so it can be concluded that all patients experience fatigue

Bivariate analysis (Table 3) by the Pearson product moment test showed no correlation between dialysis adequacy and the fatigue level in hemodialysis patients with p value 0.540 and $p > 0.05$. Based on the observation results, 17.3% achieve dialysis adequacy and 82.7% did not achieve dialysis adequacy.

Discussion

All patients experience fatigue, the results of this research support the previous studies that concluded that fatigue is the main problem of ESRD patients undergoing hemodialysis and its prevalence indicates the percentage of over 60% (Dadgari, Dadvar, & Eslam-Panah, 2015; Sodikin & Suparti, 2015; Jhamb et al., 2013). Fatigue scores increased significantly with decreasing Hb levels. HD patients with low Hb levels (<90 g/l) had significantly higer fatigue score (Yamasi, et al., 2016). Base on research data, the majority of patients did not achieve their dialysis adequacy targets. Because the minimum target for hemodialysis 2 times a week is 1.8 (PERNEFRI, 2017; NKF, 2015). The average dialysis adequacy score (1.42) is higher than Chayati, Ibrahim and Komariah (2015) research is 1.36.

The results in line with previous studies of El-Sheik and El-Gazaly (2016) and Rezaiee, Shangolian, and Shaidi (2016) which states that most dialysis adequacy is not achieved optimally. Field findings indicate that in a week almost all patients only had dialysis for 8 hours, whereas the recommendation of PERNEFRI (2017), the minimum number of hours of hemodialysis in a week was 10-15 hours. This condition contributes to the patient's dialysis adequacy achievement. Even PERNEFRI data (2017), show dialysis adequacy with a minimum limit of 1.8 for HD 2 times a week, only 69% meet the target of all dialysis in Indonesia.

Fatigue is a subjective feeling of weakness, (Jhamb et al., 2013), so that the conditions are varied depending on the patients. Based on the observation results, it revealed that the patients achieving adequacy of dialysis experienced both severe and mild fatigue. Even for those reaching adequacy, most experienced severe fatigue. This condition reflects that fatigue does not correlate directly to dialysis adequacy or even fatigue level is not a major determinant in dialysis adequacy. Physiological causes of fatigue include anemia, malnutrition, uremia, hemodialysis adequacy was not achieved, hyperparathyroidism, comorbid, sleep disorders, depression and drug side effects, (Horigan et al., 2012) result of Rezaiee, Shangolian, and Shaidi (2016) study showed that approximately half of the patients did not have an optimal level of dialysis adequacy, and multiple individuale and personnel factors affect dialysis adequacy directly or conversely. The adequacy of dialysis decreased with increased age of the patients (Anees et al., 2016). There was no significant relationship between the adequacy of hemodialysis and quality of life in all dimensions of quality of life except for the dimensions of the physical composite (Hany et al, 2019).

It is incontrast to research by Dadgari et al. (2015) who found that low levels of hemoglobin and low adequacy of hemodialysis are significantly correlated with fatigue in hemodialysis patients. Based on the results of logistic regression, it was known that there is a decrease in one component of Kt/V that can increase the risk of increased fatigue by 1.85 times. And the study of El-Sheik and El-Gazaly (2016), showed a positive correlation between dialysis dose and hemoglobin, serum albumin, normalized protein catabolic rate, and physical health. Although based on the results of research showing that almost all patients (98.7%) had anemia and suffered severe fatigue (82.7%), and most respondents not achieve dialysis adequacy. In the future, it is necessary to conduct research related to the achievement of the adequacy of hemodialysis using hemodialysis calculations with different formula parameters. There are some drawbacks of dialysis dose measurements using Kt/V, which do not take into account individual variables related to the patient such as volume control, unstable hemodynamics, clinical symptoms and biochemical parameters of the patient which are reported

to be related to patient outcomes (Vanholder, Glorieux, & Eloot, 2015).

Based on the results the majority of respondents did not achieve dialysis adequacy, in line with this, almost all respondents experienced fatigue. This reinforces the finding that there is no relationship between dialysis adequacy and fatigue. Besides that, many factors that play a role in achieving dialysis dose as well as the fatigue level of hemodialysis patients. The research data also showed that the patients received erythropoietin stimulating agents at least 2 weeks as well as iron. So that future studies need to confirm the effectiveness of Erythropoietin stimulating agents to the hemodialysis patients. It also needs to see the correlation between the levels of hemoglobin (anemia) and the fatigue level.

Based on observations, blood sampling was done for post Hemodialysis urea checkup from the blood taken from the venous line and carried out by nurses on duty in the rooms. As already disclosed by a research of Septiwi et al. (2011), blood samples taken from the venous line does not reflect the composition of circulating blood urea in the patients body in real. In hemodialysis room nurses and doctors have not measured the patient's fatigue level, dialysis adequacy is measured every 4-6 months. During the research process the health workers also have not provided programmed education especially related to fatigue and the importance of adequate dialysis doses, education is incidental when needed or patient requests, this is caused due to insufficient number of nurses, one nurse is responsible for 6 patients. It needs to be reconsidered regarding the minimum standard of dialysis hours which is 10–15 hours per week, considering that currently only 8 hours per week. The imitations of this study are the small number of partisipants, only use single value Kt / V, it is necessary to develop other similar studies involving more samples and various laboratory parameters.

Conclusion

There is no significant relationship between dialysis adequacy and the fatigue level in hemodialysis patients. We suggest that the inadequacy of dialysis and fatigue is a common condition in hemodialysis patients and to improve service to these patients, nurses and physicians should be informed and educated about these conditions and give hemodialysis appropriate on schedule and guideline.

Acknowledgement

Deep gratitude was delivered to all survey respondents, staff, nurses and physicians of Prof. Dr. Margono Sokerjo hospital in Purwokerto who were willing to contribute to this research also the Institute for Research and Community Service (LPPM) University Muhammadiyah Purwokerto as a major funder as well as.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Associations between Dependency Behavior and Management Ability in A Cross-Sectional Study of Mother who Care for Children with Avoidant Restrictive Food Intake Disorder

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Submitted: 16-01-2020 Accepted: 19-02-2020 Published: 01-04-2020

Abstract

ARFID phenomena commonly found on children are strongly dependent on parental behaviors. A dependency behavior shown by parents constitutes a specific behavior that helps the parents fulfill children's needs. This kind of behavior will define a parental management ability in dealing with eating disorder phenomena on their children. This research, therefore, was set to analyze parental dependency behavior on parental management ability in dealing with eating disorder phenomena. A cross-sectional design was occupied to accommodate the research. A total of 245 families were selected to be the respondents, especially those who were taking care of children with ARFID. Data were collected using self-administered questionnaire. For descriptive data analysis, Manne-Whitney U test, one-way analysis of variance, Kruskal-Wallis, correlation product moment, and multiple linear regression were employed. Parental dependency behavior was closely related to parental management ability in dealing with eating disorder phenomena, especially in taking care of children with ARFID ($r = 0.354$; $p = 0.000 < 0.05$). This dependency behavior encompassed parents calming children down (with $p = 0.000 < 0.05$), giving hug to children ($p = 0.000 < 0.05$), listening to children ($p = 0.001 < 0.05$), solving children's problems ($p = 0.000 < 0.05$) and fulfilling needs of food and drink ($p = 0.000 < 0.05$). On top of that, parental management ability in dealing with eating disorder occurrence was perceived referring to the result of multiple linear regression analysis, which was said to be mainly influenced by a predictor of parental dependency behavior in solving children's problems (with $\beta = 0.211$; $p = 0.001$) and fulfilling children's needs of food and drink (with $\beta = 0.134$; $p = 0.047$).Parental management ability in dealing with eating disorder was necessarily influenced by parental dependency behavior in solving children's problems and fulfilling children's needs of food and drink. Therefore, we suggest that nursing intervention be provided in respect of this case upon the population of families taking care of children with ARFID.

Keywords: ARFID, parental dependency behavior, parental management ability in dealing with eating disorder occurrence.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

Parental dependency behavior refers to a specific behavior to provide children with assistance in response to parenting needs, particularly in physical and attention forms. On one hand, dependency is defined as "... it's clearly not in control of itself" (Groarke, 2016). In short, parental dependency behavior is a particular behavior that aims at giving assistance to children in response to parenting obligatory needs in forms of attention or confession and physical assistance (Fawcett, 2017). that children are highly dependent on their parents in terms of fulfilment of food need (Hansson et al., 2016; Herschell et al., 2016).

Problems rising in parental dependency behavior can be instigated by knowledge on children's nutritional status and physical assistance on children. In fact, majority of parents are found unaware of their children's nutritional status with a number of 97% (Munthofiah, 2010). In addition, a total of 57.4% of parents are still categorized aware, but with not really high level of awareness (Bumi, 2015). On one hand, as many as 31.5% of parents do not directly provide their children with physical assistance, mainly in serving food and drink to the children, due to occupational and other contributing factors (Hidayati, 2011). As a consequence of low dependency behavior, children are found to have poor dietary habit. Moreover, 44.4% of children commit unhealthy lifestyle, buying unhealthy food (Sitoresmi, 2014). On top of that, lack of attention given by parents also results in children's nutritional disorder due to minimum fulfilment of food need by the parents (Spruijt et al., 2018).

Parental dependency behavior can elevate a behavioral response of giving attention. Children's age aggregate is equipped with high dependency on parents as regards fulfilment of food need (Hansson et al. 2016; Herschell et al. 2016). Children suffering from eating disorder are significantly influenced by a factor of dependency (Ben-Porath et al., 2014) so that parents are required to create a pleasant eating behavior and promote children's independency in fulfilling their own needs (Cullinane & Novak, 2013)

health management refers to actions of identifying, controlling, showing up, and integrating several conducts as an attempt for defensive action for the sake of status of health and prosperity (Johnson et al., 2000; McCloskey et al., 1996). Further, there are also some indicators for eating disorder management, such as: cooperation with health team, cooperation with family members, involvement and development on positive relationship, monitoring on vital signs, monitoring intake of fluid output, defining desired expectation, making use of behavioral modification, discussion with health team, and taking over responsibility.
Avoidant Restrictive Food Intake Disorder (ARFID)

Avoidant Restrictive Food Intake Disorder constitutes a new term to draw upon eating disorder on infants and toddlers with some characteristics of: refusing to eat, having poor eating schedule, showing up poor eating skills (inappropriate with children's normal development stage) (Davies et al., 2006), and less tempted to eat. In addition, the avoidance is due to food sensor covering look, smell and taste, fear of eating (dysphagia), and fear of swallowing food (Fisher et al., 2014; Kostro, Lerman, & Attia, 2014; Nicely et al., 2014) Children with ARFID are in need of assistance from parents to give protection, direction, and family support (Cismaru & Pioufle, 2016) What is more, this research was mainly intended to analyze the influence of parental dependency behavior on parental management ability in dealing with eating disorder on children with ARFID.

Method

Research Design

This current research occupied descriptive cross-sectional survey design.

Setting and sample characteristics

The study was conduct in Malang District, Indonesia, between August 2018 and February 2019. The sample size was determined based on the rule of tumb in structural equation modelling, which is to multiply the total number of parameters by 5 or 10 (Azman, 2017). Normally, there are 10 paramaters included; thus, the total sample would be 10

x 10, which would equal 100 participants (minimum number). There were 245 potential participants. Multistage sampling was employed to gradually determine the final size of the sample (Taherdoost, 2018).

In addition, there were inclusive criteria of the respondents, such as that: 1) they took care of 5-year-old children; 2) the children suffered from ARFID which were shown by the following symptoms, such as food avoidance based on food sensor including look, smell and taste; 3) the children did not suffer from chronical illnesses; and 4) the children were not congenitally disordered, especially on dietary tract.

Questionnaire

Data collection was executed through questionnaire. The questionnaire of dependency behavior was developed from Johnson Behavioral System Models consisted of 6 (six) items in total with some indicators of:1) calming children down when crying or sad, 2) giving hug when in fear, 3) keeping eye contact, 4) listening to children's problems, 5) helping solve the problems, and 6) providing children with food and drink. Each of the items was equipped with 5-point Likert scale with the descriptors of: 1= never, 2= seldom, 3= sometimes, 4= frequently, 5= always). Moreover, the validity values of the six domains signified: 0.40; 0.58; 0.53; 0.76; 0.73; and 0.40, with Cronbach's Alpha value of 0.62. The questionnaire of management in eating disorder developed from manual book nursing intervention criteria occurrence comprised 9 (nine) items with indicators of : cooperation with health team, cooperation with family members, involvement and development on positive relationship, monitoring on vital signs, monitoring intake of fluid output, defining desired expectation, making use of behavioral modification, discussion with health team, and taking over responsibility, with the use of 5-point Likert scale with the descriptors of: 1= never, 2= seldom, 3= sometimes, 4= frequently, 5= always). the validity values of the nine domains consecutively signified: 0.74; 0.72; 0.71; 0.72; 0.73; 0.81; 0.84; 0.77; 0.77, with Cronbach's Alpha value of 0.88.

Data Collection

Data of the research were collected in between August 2018 and February 2019,. The questionnaire, further, was administered to integrated public health service posts and/ or residences on the targeted area. In fact, there were a total of 245 participants involved.

Data Analysis

The whole data were analyzed using IBM SPSS Statistics 23.0 software (IBM Corp., Armonk, NY, USA) with $p < 0.05$ as the level of significance. Demographic data of mothers and children were presented in a form of frequency distributions (percentages). The data of dependency behavior and management ability in dealing with eating disorder phenomena were presented as mean values (or standard deviation). Moreover, Pearson Correlation Coefficient was occupied to analyze the correlation between parental dependency behavior and management ability in dealing with eating disorder occurrence. In addition, multiple linear regression was used to examine the influence of parental dependency behavior on management ability in dealing with eating disorder occurrence, especially for those mothers taking care of children with ARFID. Initially, this research had been granted an ethical approval from ethical committee of research of Faculty of Public Health, Airlangga University with reference number of 333-KEPK. All the participants had also written informed consent alongside their signatures. Thus, privacy and confidentiality were totally assured.

Results

Table 1 Demographical Characteristics of Mothers and Children

Characteristics	Parental Dependency Behavior				
	Good	Fair	Poor	Total	P Value
	n (%)	n (%)	n (%)	n (%)	
Age					
17–25	14(23.0%)	37(6.7%)	10(16.4%)	61(100%)	0.207

Characteristics	Parental Dependency Behavior				
	Good	Fair	Poor	Total	P Value
	n (%)	n (%)	n (%)	n (%)	
26–35	31(22.3%)	95(68.3%)	13(9.4%)	139(100%)	
36–45	5(11.1%)	36(80.0%)	4(8.9%)	45(100%)	
Educational Background					
Elementary School	9(18.0%)	36(72.0%)	5(10.0%)	50(100%)	0.078
Junior High School	12(16.0%)	52(69.3%)	11(14.7%)	75(100%)	
Senior High School	26(29.2%)	53(59.6%)	10(12.2%)	89(100%)	
Higher Education	3(9.7%)	27(87.1%)	1(3.2%)	31(100%)	
Employment					
Unemployed	42(22.1%)	130(68.4%)	18(9.5%)	190(100%)	0.219
Employed	8(14.5%)	38(69.1%)	9(16.4%)	55(100%)	
Number of Children					
1	20(19.2%)	70(67.3%)	14(13.5%)	104(100%)	0.868
2	21(21.6%)	67(69.1%)	9(9.3%)	97(100%)	
3	9(25.0%)	24(66.7%)	3(8.3%)	36(100%)	
4	-	6(85.7%)	1(14.3%)	7(100%)	
5	-	1(100.0%)	-	1(100%)	
Monthly Income					
<1 Juta	10(17.9%)	36(64.3%)	10(17.9%)	56(100%)	0.336
Between 1-2 Juta	29(23.0%)	87(69.0%)	10(7.9%)	126(100%)	
>2 Juta	11(17.5%)	45(71.4%)	7(11.1%)	63(100%)	
Children's Age					
0–3 years old	40(22.6%)	120(67.8%)	17(9.6%)	177(100%)	0.257
>3–5 years old	10(14.7%)	48(70,6%)	10(14.7%)	68(100%)	
Children's Gender					
Male	22(20.0%)	76(69.1%)	12(10.9%)	110(100%)	0.987
Female	28(20.7%)	92(68.1%)	15(11.1%)	135(100%)	
Children's Body Weight					
Very Underweight	1(14.3%)	6(85.7%)	-	7(100%)	0.485
Underweight	10(25.6%)	24(61.5%)	5(12.8%)	39(100%)	
Normal/Ideal	39(19.8%)	137(69.5%)	21(10.7%)	197(100%)	
Overweight	-	1(50.0%)	1(50.0%)	2(100%)	
Children's Body Height					
Very Short	13(26.0%)	32(64.0%)	5(10.0%)	50(100%)	0.771
Short	7(18.4%)	26(68.4%)	5(13.2%)	38(100%)	
Normal	27(18.1%)	106(71.1%)	16(10.7%)	149(100)	
Tall	3(37.5%)	4(50.0%)	1(12.5%)	8(100%)	

Table 2 Parental Management ability in dealing with eating Disorder Occurrence

Characteristics	Parental Dependency Behavior				
	Good	Fair	Poor	Total	P Value
	n (%)	n (%)	n (%)	n (%)	
Mothers' Age					
17–25	15(24.6)	40(65.6)	6(9.8)	61(100%)	0.048
26–35	18(12.9)	102(73.4)	19(13.7)	139(100%)	
36–45	2(4.4)	35(77.8)	8(17.8)	45(100%)	
Educational Background					
Elementary School	5(10.0)	35(70.0)	10(20.0)	50(100%)	0.049
Junior High School	10(13.3)	49(65.3)	16(21.3)	75(100%)	
Senior High School	15(16.9)	68(76.4)	6(6.7)	89(100%)	
Higher Education	5(16.1)	25(80.6)	1(3.2)	31(100%)	
Employment					
Unemployed	28(14.7)	138(72.6)	24(12.6)	190(100%)	0.749
Employed	7(12.7)	39(70.9)	9(16.4)	55(100%)	
Number of Children					
1	23(22.1)	73(70.2)	8(7.7)	104(100%)	0.018
2	10(10.3)	74(76.3)	13(13.4)	97(100%)	
3	2(5.6)	24(66.7)	10(27.8)	36(100%)	
4	-	5(71.4)	2(28.6)	7(100%)	
5	-	1(100)	-	1(100%)	
Monthly Income					
<1 Juta	7(12.5)	37(66.1)	12(21.4)	56(100%)	0.248
Between 1-2 Juta	16(12.7)	95(75.4)	15(11.9)	126(100%)	
>2 Juta	12(19.0)	45(71.4)	6(9.5)	63(100%)	
Children's Age					
0–3 years old	25(14.1)	126(71.2)	26(14.7)	177(100%)	0.665
>3–5 years old	10(14.7)	51(75.0)	7(10.3)	68(100%)	
Children's Gender					
Male	17(15.5)	79(71.8)	14(12.7)	110(100%)	0.870
Female	18(13.3)	98(72.6)	19(14.1)	135(100%)	
Children's Body Weight					
Very Underweight	2(28.6)	4(57.1)	1(14.3)	7(100%)	0.826
Underweight	7(17.9)	26(66.7)	6(15.4)	39(100%)	
Normal/Ideal	26(13.2)	145(73.6)	26(13.2)	197(100%)	
Overweight	-	2(100)	-	2(100%)	
Children's Body Height					
Very Short	7(14.0)	32(64.0)	11(22.0)	50(100%)	0.096
Short	6(15.8)	29(76.3)	3(7.9)	38(100%)	
Normal	20(13.4)	113(75.8)	16(10.7)	149(100)	
Tall	35(14.3)	3(37.5)	3(37.5)	8(100%)	

Table 3 The Correlation between Parental Dependency Behavior and Management Ability in Dealing with eating Disorder Occurrence (r/p)

Variables	Management Ability
Parental Dependency Behavior	0.354 / 0.000
Calming children down	0.243 / 0.000
Giving hug to children	0.288 / 0.000
Keeping eye contact	0.064 / 0.316
Listening to children	0.205 / 0.001
Solving children's problems	0.301 / 0.000
Fulfilling children's needs of food and drink	0.281 / 0.000

Table 4 Multiple Linear Regression of The Influence of Parental Dependency Factor Corresponding to Management Ability in Dealing with Eating Disorder Occurrence

Variables	B	SE	β	t	p
Constants	15.371	4.716		3.260	0.001
Calming down children	0.531	0.795	0.046	0.668	0.505
Giving hug to children	1.098	0.679	0.112	1.617	0.107
Keeping eye contact	-0.038	0.353	-0.007	-0.107	0.915
Listening to children	0.697	0.403	0.112	1.730	0.085
Solving children's problems	1.557	0.464	0.211	3.355	0.001
Fulfilling children's needs of food and drink	1.710	0.856	0.134	1.999	0.047

Dependency Behavior as a Representative of the Characteristics of Mothers and Children

With reference to Table 1, it is shown that dependency behavior was not necessarily influenced by such factors as age, educational background, employment, number of children, and income families had made in a month as each of the factors was equipped with p value of bigger than 0.05. Parental dependency behavior could be drawn from the majority of age groups, specifically in the category of 17–25 years old (with a total of 23.0%). According to educational background, good parental dependency behavior was shown by those graduating from senior high school with a total of 29.2%. Meanwhile, referring to data of occupational domain, it is demonstrated that good parental dependency behavior was performed by unemployed parents with a total of 22.1%. In respect of number of children, good parental dependency behavior was made by those taking care of 3 (three) children with a total of 25.0%. In addition, those who made monthly income of 1–2 million were also found to perform good dependency behavior with a total of 23.0%. Parental dependency behavior, furthermore, was not also influenced by such other factors as children's age, gender, body weight, and body height since each of the factors had the p value of bigger than 0.05. On top of that, good practice of parental dependency behavior was demonstrated alongside the following criteria found in children, such as aging 1-3 years old (22.6%), female (20.7%), having ideal body weight (25.6%), and tall (37.5%).

Management ability in Dealing with Eating Disorder Occurrence

With reference to Table 2, it is shown that parent's management ability in dealing with eating disorder occurrence was defined by some factors, such as mother's age (with p value of 0.025), educational background (with p value of 0.049) and number of children (with p value of 0.018). In addition, parental management ability in dealing with eating disorder occurrence was not necessarily determined by factors of employment and income since the p value was shown

bigger than 0.05. Further, good parental management ability was demonstrated based on the following criteria, such as: mothers aging17–25 years old (24.6%), graduating from senior high school (16.9%), unemployed (14.7%), taking care of only a child (22.1%), and making income more than 2 million (19.0%).

Moreover, parental management ability in dealing with eating disorder occurrence had nothing to do with some factors, in the sense of children conditions, such as age, gender, body weight, and body height since each of the factors was equipped with the p value of bigger than 0.05. In fact, good parental management ability in dealing with eating disorder occurrence was performed to those aging >3–5 years old (14.7%), male (15.5%), very underweight (28.6%), and tall (15.8%).

The Correlation between Parental Dependency Behavior and Management Ability in dealing with eating Disorder Occurrence

Table 3 demonstrates the correlation between parental dependency behavior and management ability in dealing with eating disorder phenomenon endured by children with ARFID. The correlation was fair, with $r = 0.354$. There were some parameters to define the correlation between the two variables, such as calming children down (with $p = 0.000 < 0.05$), giving hug to children (with $p = 0.000 < 0.05$), listening to children (with $p = 0.001 < 0.05$), solving children's problems (with $p = 0.000 < 0.05$) and fulfilling children's needs of food and drink (with $p = 0.000 < 0.05$).

Parental Dependency Behavior on Management Ability in Dealing with Eating Disorder Occurrence

Tabel 4 the result of multiple linier regression, indicating that two domains of parental dependency behavior, solving children's problems and fulfilling children's needs of food and drink, could influence parental management ability in dealing with eating disorder occurrence. In addition, parental dependency behavior in solving children's problem was assumed positively influencing management ability in dealing with eating disorder occurrence (with $\beta = 0.211$, $p = 0.001 < 0.05$). Furthermore, parental dependency behavior in fulfilling children's needs of food and drink was also positively influencing the management ability (with $\beta = 0.134$, $p = 0.047 < 0.05$).

Discussion

Parental Dependency Behavior Based on the Characteristics of Mothers and Children

Parental dependency behavior had not correlation with mother's age. This was because the majority of mothers aged in the ranks of 17–25 years old, which was found equipped with good dependency behavior. Mothers aging 17–25 years old would be having better understanding on children's development so that they could reach optimum development according to their level of age (Nihen Grah Prihantanti 2017). In addition, parental dependency behavior was not influenced by educational background. High educational background could not totally ensure that mothers would be fully understanding determining factors that might influence children's nutritional status. A research carried out by Pratiwi, Masrul, and Yerizel (2016) explained that mothers who took high education would be easier in receiving information regarding how to give good attention to children. Nonetheless, alongside the massive advancement of science in any disciplines, any mothers who had attended senior high school and was found perseverant would be able to gain access to information about children's needs of nutrition (Rarastiti 2013; Solehati et al. 2017).

Henceforth, parental dependency behavior was not influenced by employment status. This was mainly because unemployed mothers would be having much more time to spend with their children so as to make them easier to control or notice their children's dietary habit very well (Bumi, 2015). In addition, the dependency behavior was not influenced by number of children. It was due to the fact that those taking care of some children (>1 child) would be more enjoyable in performing their main role as a mother, primarily in fulfilling children's needs, since they had acquired previous parenting

experiences with previous children they had been raising (Myrskylä & Fenelon, 2012). Also, the dependency behavior did not also correlate with income. Different amount of income people had made would be making them have different lifestyle. those parents making income of 1-2 million would be easier in fulfilling children's needs. Thus, their needs of food and drink will be of great assurance (Rohma, 2017).

Management ability in dealing with eating Disorder Occurrence Based on the Characteristics of Mothers and Children

Good management ability in dealing with eating disorder occurrence refers to a specific attitude shown by parents to their children for the sake of warmth, sensitivity, and awareness of limitation in addition to enforcement to children (Taraban & Shaw, 2018). The management ability was influenced by mothers' age (with p value of 0.048). In addition, age was also assumed one of factors influencing mothers' attention. Parenting was categorized good only if mothers age belonged to criteria of 17–35 years old (Hidayah, 2017),. The research indicated that a rank of ages strongly influenced parenting style. When mothers were too mature and young, therefore, they could not do their role optimally since, in parenting, it was in need of both physical and psychosocial strengths. In addition, those who were ideally more mature and stable, in terms of psychological condition, would be able to performed a quality parenting style for their children (Burlaka, Graham-Bermann, & Delva, 2017). children who were born from mothers aging younger than 17 years old or older than 25 years old would be having more negative outcome with reference to health, body weight, and obesity probability than those born from mothers aging 17–25 years old (Myrskylä & Fenelon, 2012).

Management ability in dealing with eating disorder occurrence was influenced by educational background (with p value of 0.049). The majority of the respondents who were identified graduating from senior high school was categorized good in terms of management on eating disorder occurrence. The educational background possessed by parents, further, would influence parental behavior in doing parenting upon their children. Those mothers who were senior high school graduates would not only make very simple understanding, but also do good parenting and provide children with anything they were in need of. This was because of the presence of awareness that to support children optimally, they did not only need one thing to complete, but also things considered vital (Bao et al. 2016; Uyun, Fitri, dan Rakhmawati 2013).

Management ability in dealing with eating disorder occurrence was not influenced by status of employment. Most of the respondents were unemployed and had performed good management in dealing with eating disorder occurrence. Unemployed mothers would be having more time to keep their children company, managing and raising their children with the ultimate aim of giving serious attention to children's nutritional supply (Labada, 2016). According to the research, it was shown that there were some other factors found to influence parenting style in managing children's eating disorder occurrence.

Factor of number of children raised in a family was also proved influencing management ability in dealing with eating disorder occurrence with a category of good (with p value of 0.018). A good parenting applied in managing eating disorder occurrence on children was majorly performed by those respondents taking care of a child (Adawiah, 2017). In addition, her research claimed that number of children possessed by a family would give influence upon parenting style. The more the number of children in a family, the less maximum the parenting would work since the parents' time would be divorced between one to others.

Furthermore, management ability in dealing with eating disorder was not influenced by factor of income. With reference to a research carried out by (Widyastuti, 2017), it was stated that the higher the parents' income was, the better the parenting style would be. Allegedly, this was due to the fact that high income made by families would make them much easier to fulfill their children's needs of food and drink (Kartiko 2013).

The Influence of Parental Dependency Behavior on Management ability in dealing with eating Disorder Occurrence

Parental dependency behavior constituted the ultimate factor to define management ability in dealing with eating disorder occurrence. This was because the dependency behavior shown up through attitudes and behaviors in educating, guiding, communicating with, and doing many things with children was aimed at fulfilling children's basic needs as well as influencing children's characteristics (Nurhayati, 2017). To actualize the dependency behaviors, some actions could represent, such as giving attention to children, getting close to children, and giving physical assistance in a form of support to children. Henceforth, the primary aspect of dependency referred to attention. Parental attention was considered pivotal to be highlighted by parents towards their children since it encompassed exemplary model and direction which would be positively influencing children's growth and development (Fausi, 2017). Parental attention and awareness of children would make the children feel loved and safe. One of various examples could be by inviting other children to have a talk, listen to what was children are talking about, and giving praise to children based on their achievement (Rezky, 2010). On top of that, parental attention to children was strongly influencing the occurrence of children's eating disorder for the attention could be given by both fathers and mothers in event of fulfilling children's needs of food and drink (Fausi, 2017).

Parental dependency behavior, moreover, was in a form of either physical assistance or support. Both the physical assistance and support was alleged very influencing upon children's eating disorder since they constituted social support that could be provided by parents or families which were deemed positive to children in response to their needs. In addition, parental support also manifested a form of receival from parents to children so as to raise children's perception that they were loved, recked, and respected (Zahra, 2018). Parental support would raise warmth in the relationship of parents and children and was so responsive that parents could interact with children regularly and respond to children's needs of food (Lopez et al., 2018).

Parental dependency behavior in fulfilling children's needs of food and drink would make children feel so happy and contented when all they needed were fully fulfilled. Nutritious food and intensive stimulation from parents were obviously necessary for children's growth and development (Haerunisa, Taftazani, dan Apsari 2014; Naim, Juniarti, dan Yamin 2017; Rahayuwati et al. 2019). Taking over full responsibility of children's physical activities and food, according, had made mothers play important roles for basic need fulfilment which was categorized into 3 (three), namely affection, attention, and safety for the sake of their growth and development based on their age level (Rarastiti, 2013). Parenting needs, especially in fulfilling children's needs, covered needs for raising and caring of children, such as fulfilment of food and drink, in order to preserve children's health. By doing so, children could grow up physically, mentally, socially, and spiritually healthy. Besides, the parenting need was also defined as fulfilment of children's needs of education so that they would transform to be more independent and prepared for their future.

Conclusion

Parental dependency behavior constitutes an important factor in defining management ability in dealing with eating disorder occurrence. Parental skill in solving children's problems and parental ability to fulfil children's needs of food and drink shown by a good pattern of feeding would be impactful to manage children with ARFID. This can be a basis for further consideration, especially for the community of nurses, to design a series of plans as a form of nursing intervention in an attempt to prevent the occurrence of nutritional disorder on children with ARFID.

Acknowledgement

An enormous gratitude be always upon Bapak Faqih Ruhyanudin as the Dean of Faculty of Health Sciences, University of Muhammadiyah Malang who has granted

support for the accomplishment of this current research.. At last, a dutiful gratitude be upon all the participants who had been willing to involve in the research.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Patients Experience and Perception in Preventing Tuberculosis Transmission in Rural Areas: A Qualitative Research

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Submitted: 19-12-2019 Accepted: 21-02-2020 Published: 01-04-2020

Abstract

Tuberculosis (TB) transmission awareness is crucial for TB prevention in the community. However, efforts to prevent TB transmission from TB patients' perspectives, especially in the rural area, are not well documented. This study aimed to explore the efforts made by TB patients in preventing transmission to the community. This research was qualitative research with a phenomenological approach. Participants in this study were 12 people selected by purposive sampling. Data collection was done by in-depth interviews and recorded. Data analysis was carried out by thematic analysis. This study produced seven themes: perception of TB disease, performing alternative treatments, using personal protective equipment, environmental modification, adhering to treatment, limiting interactions with others, and increasing food intake. Knowledge and awareness of TB patients are still an issue in preventing the transmission of TB in the community. Immediate intervention needs to be made regarding increasing knowledge and awareness of TB patients and the supervision of health workers regularly in handling TB disease in the community.

Keywords: Community setting, transmission prevention, tuberculosis patients.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

The global tuberculosis report 2019 stated that Indonesia was ranked third (8%) with the most TB sufferers after India (27%) and China (9%). The total TB Incidence in Indonesia in the last five years was always increased; in 2017, there were 844.000 TB cases, and in 2018 there were 845.000 cases (World Health Organization, 2019). The trend of TB cases in Indonesia has never declined, there are still many cases that have not been reached and detected, even though they were detected and treated but have not been reported (Kementerian Kesehatan RI, 2018). TB is the second leading cause of death in the world. The TB rate in Indonesia is microscopically based on 759 per 100,000 people for ages 15 years and over with a higher number of men than women, and the number in urban areas is higher than in rural areas (World Health Organization, 2019).

Indonesian government has carried out several interventions such as increasing detection with a family approach, resolving under-reporting TB treatment with strengthening Public-Private Mix (PPM), improving TB treatment compliance, Improving the drug-resistant TB detection system in the form of MDR TB clinics and access to MDR TB therapy, education related to TB in the community and repair of housing, as well as the fulfillment of analysts with increased sensitivity to diagnosis. Indonesia has collaborated with USAID to establish a referral hospital to help improve the number of MDR TB case detection in the past four years and train TB cadres (local health workers) to educate the public about TB control and prevention (USAID, 2017).

Effective collaboration between health services and the community can increase access to TB patients' homes and reduce medical expenses for TB patients and reduce the workload of health workers. The involvement of TB patients in the treatment of TB can also facilitate patient and community empowerment interventions in handling TB. Community empowerment and TB patients can be done by involving patients and communities, health education related to TB related issues, and encouraging changes in healthy living behavior (World Health Organization, 2008, 2015). Empowering patients and communities require knowledge regarding the rights and responsibilities of each individual, access to information, and the ability to utilize the knowledge and skills needed. Some of the rights of TB patients are attention related to care, appreciation, information, choice, confidence, fairness, organization and security while the obligation of TB patients in the form of information sharing, adherence to treatment, and patient contributions to community health and solidarity (World Health Organization, 2008).

Patients' challenges facing TB transmission prevention in the community might vary within a different context. Therefore, an in-depth understanding of the challenges faced by TB patients in TB transmission prevention is crucial to identify potential areas for improvement. This study was thus conducted to explore TB transmission prevention from TB patients' perspectives. This study aims to explore the experience of the efforts of TB patients in preventing TB disease in the community.

Method

Design

This research was qualitative research with a phenomenological approach.

Participant

The participants of this study were TB patients who received treatment with a duration of treatment of six months, lived in a Pandalungan area, were native to the Pandalangan, were at least 18 years old, and could speak Indonesian or Local (Madura). Participant data were obtained from Klakah Public health centers, which were then selected according to inclusion criteria and selected using purposive sampling. The participant has no relationship prior to the researcher. The researcher came to the participant's house to self introduce and explain the purpose of the study and how to collect data and ask for approval to become the participants of the study.

Data Collection Procedure

Qualitative data was collected through

in-depth interview methods individually by exploring the experiences of TB patients in an effort to prevent TB transmission in the community using the phenomenology approach. The phenomenology approach aims to describe individual experiences related to a particular phenomenon about how the individual interpreted his experience (Yusuf et al., 2017). The interview process was conducted by ES, which has been experienced in qualitative data collection before and works as a lecturer in community nursing. The interview question begins with the opening question "Tell us about your experience in preventing TB transmission in the environment around you?". Subsequent questions were developed based on participants' responses regarding the questions that were asked to participants. Interviews were conducted in the participant's house, where participants felt comfortable in the interview process. Interviews were conducted using the local language of participants and Indonesian for approximately 30–45 minutes per participant. Participant answers are recorded using a recorder and recorded in the note field during the interview process. The verbatim process of recording into a direct transcript was carried out after the interview was conducted to obtain accurate data. Data collection ends when data saturation occurs.

This study was a part of research tree that explore TB prevention from professional health worker perspectives (Sulistyono et al., 2019) and this study was explore the TB prevention from patient perspectives.

Analysis

The data analysis process is carried out simultaneously with the process of collecting data. All data were transcribed verbatim and analyzed thematically include identification, coding, analysis, and clustering. The identified themes are displayed with statements from participants with the aim of increasing the wealth and depth of the data found. The participant's quotation is displayed in Italic and followed by participant details.

To ensure rigour, transcripts were read by two researchers (ES and DT). The thematic framework was developed, keeping agreed themes by discussing, negotiating, and agreeing on the content, as well as the development of new themes (or subthemes) where there was disagreement. To ensure the data trust-worthiness, the researcher (ES) was conduct member checking by verifying the transcript to participants and matching it with records and field notes. The study process is discussed with the research supervisor (TS) and the research team.

Ethical Clearance

The study had obtained ethical approval from the Faculty of Dentistry, Universitas Jember No 114/UN25.8/KEPK/DL/2018 and informed consent were signed by all participants, interview transcripts were coded, and participant details were not collected.

Results

Table 1 Participants demographic data

No of Participants	Sex	Age (years)	Job	Living with	Education Level	Smoking Habit
1	F	55	Housewife	Son	Junior High School	No
2	F	24	Islamic Teacher	Husband	Senior High School	No
3	M	39	Migrant Labor	Wife and Son	Junior High School	No
4	M	49	Farmer	Wife and Daughter	Junior High School	Yes
5	M	61	Pedicab	Grandson	Junior High School	Yes
6	F	38	Housewife	None	Junior High School	No
7	M	60	Farmer	Wife	Junior High School	Yes
8	M	21	Student	Parents	College	Yes
9	M	58	Repairman	Children	Junior High School	No
10	F	43	Grocer	Husband and Children	Senior High School	No

No of Participants	Sex	Age (years)	Job	Living with	Education Level	Smoking Habit
11	M	55	Farmer	None	Junior High School	No
12	M	50	No Job	Wife and Son	Junior High School	Yes

Abbreviation:
F=Female
M=Male

The sample in this study amounted to 12 participants (n = 12) (Table 1). The age range of participants is 21–65 years. The total participants in this study were male of 8 participants and four female participants. Almost all participants were educated in junior high school (9 participants). Two participants were educated in high school, and one participant was studying. Two participants were a housewife, one participant as a Moslem reciting teacher; one participant was migrant labor, three participants were farmers, one participant was a pedicab driver, one participant was still in college, the rest were mechanics, sellers and had no job.

Knowledge and Participant Perception of TB disease

TB is known as lung disease or is known to the public by the name of TBC. Most participants stated that TB was an infectious disease and could be cured. Participants said that the TB disease they suffered could recover if they adhered to treatment. Two participants stated as follows:

"... at first I was worried about coughing up blood, afraid of why, but he said (health professional) this disease could heal..." (Male 39 years)

"... It was already explained by the health workers, I forgot the name that my illness was severe, but this disease can be healed with treatment for about six months ..." (Male 49 years)

Almost all participants said that TB disease is a contagious disease. Some participants stated that TB was transmitted through the airborne, but most interpreted TB transmission with incorrect perceptions, as stated by the following participants:

"I am careful (in behaving) afraid of contagious. I also rarely gather with my wife during treatment, so as not to spread "(Male 49 years)

"I separate my plate from where I eat and drink with my family, so it's not contagious" (Female, 55 years)

Efforts of TB Patients in Prevention of Transmission of TB

Performing Alternative Treatment

Some participants stated that they performing alternative therapy, for example, go to Kiai (Islamic teacher), dukun (Traditional Healer), and drank traditional medicine as an effort to recover while still taking the medication in health services. Participants stated their statements as follows:

"Yeah ... I went to the Kiai (Islam Teacher), Bu he didn't give me medicine. He told me to drink herbal medicine. What is the herbal medicine name ... (thinking) ... it is white turmeric just the same ... just like gingers" (Female 55 years)

"I drank herbs such as turmeric, temulawak (Curcuma xanthorrhiza Roxb), temu ireng (Curcuma longa L.) is cut into small pieces, the water is boiled. Water with green, water sablukan (rice laundry). Anyway, there are instructions from people; I did it because I wanted to get well. I even do things besides medicine" (Male 49 years)

"I take traditional medicines such as turmeric when coughing" (Female 38 years)

Using personal protective equipment

Some participants said using personal protective equipment such as masks or closing with their hands when coughing to prevent transmission of TB to others. As stated by participants as follows:

"Even though I always wash until I have something. Ask why I use masks every day. I tell you to get well soon and not spread to others "(Male 39 years)

"Every time I cough, I always close with my hands or tissue or turn back" (Female 24 years)

Another participant said that they were only wearing a mask when they go to the public health center because of fearful that

health professional workers would be angry because they did not comply with the order to wear a mask. Participants stated the reason for not wearing a mask when outside the health facility because they felt uncomfortable and some participant thought incorrect perceptions of wearing a mask could cause the TB disease that he suffers is hard to be cured as did the participants as follows:

"... I rarely use masks at home. Because when you wear a mask it's hard to breathe. But when I go to the puskesmas (public health center), I use a mask because I must be scolded if I don't obey wearing a mask. I think that when the mask is in the mask, I will breathe again so that the diseases do not heal. If I don't have a mask, I can breathe comfortably ... "(Male 49 years)

"No, I don't wear a mask because it's not good. It feels sticky. Usually, when you check into the puskesmas (public health center), you just use a mask, if you don't use a mask, you can be scolded by the officer. Instead of being scolded, I use it "(Male, 61 years)

Environmental Modification

Adequate ventilation

Participants stated that improving ventilation in the home environment is one of the efforts to prevent transmission of TB disease. As the participant's statement is:

"I open the room window so that the sun goes in" (Male 21 years)

"In the past, there was no window, but after being told by Pak Budi (Health Officer) to open it so that sunlight could enter, finally put on the window" (Female 43 years)

"In addition to often opening windows, some tiles in my house are replaced with glass tiles" (Female 24 years)

Sputum Disposal

Participants said several different ways related to sputum disposal. Sputum disposal is carried out in the toilet, in the trash and wrapped in cloth, and then thrown into the river or burned. As stated by participants as follows:

" I waste my spit (sputum) on the toilet." (Female 55 years) & (Female 38 years)

"They (sputum) were dumped in the trash, in the river, but they were thrown away at 9-10 a night, I afraid that someone would be in the river, then they would spread. I have to think of others" (Male, 61 years)

"When coughing, the sputum is put on a cloth, clothes that are not worn. After that it is thrown into the river, sometimes burned, sometimes in the toilet "(Male 39 years)

"Usually I waste it sometimes on the ground, then it is evenly spread using sand with my feet" (Female 55 years)

Some participants did not throw sputum in a certain place but are considered throwing out cough sputum even though they know that the disease is an infectious disease. As stated by participants in the following statement:

"Yes, I just do a normal cough without covering it. I throw it wherever I want to throw it" (Male 49 years)

Smoking Behavior

Participants stated that they quit smoking because they were afraid that the disease would get worse with smoking as said by participants as follows:

"I used to smoke a while, but now that my illness has stopped. Coffee is also rare "(Male 39 years)

Participants said that avoiding cigarette smoke to prevent the disease from getting worse, as told by participants as follows:

"In tahlilan (praying in community), which is usually served by cigarettes, I always choose the position in the front because it feels like to breathe smoke rather tightly" (Male 49 years)

Participants stated that they could not stop their smoking habits. Participants lied to health professional workers when asked about smoking habits such as participant statements as follows:

"When I asked by health professional workers, I said no smoking. It is true when I was asked not to smoke, but after I was at home I smoked in a stall "(Male 61 years)

"When I was at home or asked by my parents to say I didn't smoke, sometimes I kept smoking" (Male 21 years)

Adhering with treatment

Some participants stated that they tried to take anti-TB drugs on a regular basis despite causing discomfort due to high motivation from themselves to recover. As stated by

participants as follows:

"The red medicine causes stomach ache if the officers say at the health center, there is a stomach ache, nausea, and so on. This is what pains the stomach. But I still drink medicine; I want to get well" (Female 55 years)

"Initially there was a feeling of boredom, but because I wanted to get well, I drank continuously" (Male 58 years)

Attempts to adhere to taking medication were also carried out because the experience of failure in terms of medication compliance was previously delivered by participants as follows:

"I initially did not like taking medicine, then with Pak Budi (program holder) motivated. It's uncomfortable to take medicine; it feels like there's no change. But he said if it is not treated, it will get worse and more easily spread to the closest people. I have been hospitalized, hot, uncomfortable eating, my appetite dropped. At that time, I did not take medicine. Finally, I have to start treatment since the beginning again "(Male 49 years)

Limit interactions with others

Some participants said limiting interaction with others to prevent transmission of TB. The interaction limitation is in the form of separating the bedroom from the family and partner and limiting the interaction outside the home with the neighbors. The statement was said by participants as follows:

"I slept alone; my children are in another room. Pak Budi (the holder of the TB program at the Public health center) said that I have to sleep in separate rooms with my family, had to sleep alone for a while during treatment "(Female 55 years)

"I am afraid of contagious care. I also rarely gather with my wife during treatment, so as not to rub off "(Male 49 years)

"While I separate beds with husband" (Female 38 years)

"I often stay at home and rarely gather with neighbors" (Male 50 years)

Increase food intake

Some participants stated that they increased the number of food portions to prevent worsening of TB disease suffered as presented by participants as follows:

"I Eat three times a day; no restrictions only reduce the oily. I have had no side effects" (Male 49 years)

"Yeah ... yeah, it's not good. After a few days later, it feels good. A day, I eat many times. if there are rujak (traditional food), the main thing is that there are no restrictions that are important to eat" (Male 61 years)

Discussion

This study produced seven themes: perception of TB disease, performing alternative treatments, using personal protective equipment, environmental modification, adhering to treatment, limiting interactions with others, and increasing food intake.

Most of the participants interpreted TB transmission with incorrect perceptions, even though TB patients in this study conduct care in community health centers and contact with health workers. Incorrect perceptions about TB is an issue that needs to be addressed because it can lead to a false understanding of TB that can hamper efforts to control and prevent TB in the community. Other studies regarding the opinions and false beliefs about TB disease (Buregyeya et al., 2011; Mbuthia et al., 2018) that is regarding the transmission of TB through alternating using tableware from TB sufferers and transmission through smoking behavior.

Some participants performed alternative treatment for the disease. Indonesian community treatment choices, still involve the traditional and the modern, and also individuals who pragmatically decide who to consult, with access and affordability prominent determinants of choice (Viney et al., 2014). this finding can be one of the considerations to include a traditional healer as one of the means of health promotion, especially in TB sufferers to continue to follow the treatment until completion.

The use of masks as an effort to prevent transmission of TB is still not done optimally by TB patients. This finding is consistent with previous study that found that mask use in TB patients tends to be low (Nurhayati et al., 2015). World Health Organization issued a policy that patients need to be educated about the ethics of coughing and respiratory hygiene,

such as covering the mouth and nose when coughing or sneezing or using covers such as tissues or masks to prevent transmission of TB germs, especially in health care environments. (Jo, 2017). Some participants have carried out the ethics of coughing and using masks to prevent transmission of the disease. However, there are still many participants who do not know the ethics of coughing and are less concerned with the ethics of coughing and the use of masks. Some studies suggest that the implementation of cough ethics is less effective in preventing TB droplet transmission (Zayas et al., 2013) but other studies and WHO state that ethical behavior of coughing needs to be done to reduce TB germs transmission, especially in health care settings and vulnerable groups in the community (Jo, 2017; USAID, 2015).

Air infection control is an effort to control TB disease, which is an essential and often overlooked action. Participants said they made modifications to the environment, so the environment was not humid. Many studies suggest increasing natural ventilation to reduce the transmission of TB in the home environment (Lygizos et al., 2013; Richardson et al., 2014). The intervention is one of the responses with minimal costs and effective in preventing TB transmission in the environment. Increased ventilation can be done by increasing the number of windows, the ratio of larger windows, as well as windows and doors that are always left open (Lygizos et al., 2013). This is expected to increase the flow of air and sunlight into the room.

The appropriate sputum disposal in TB patients in the home environment is one of the efforts to reduce the transmission of TB in the community. Some literature suggests that health workers should provide education on how to do sputum disposal in TB patients in the home environment that is removing sputum into tissue or paper and burning it or burying it, removing sputum in a pot or a small container that is closed and then burying it (Cheriamane et al., 2017). Proper sputum disposal is an effective way to minimize the spread of TB (Singh et al., 2016). Some participants threw their sputum into the river, and some did not care about sputum discharge management. Health workers need to provide education regarding the safe and correct disposal of phlegm from TB patients. Health workers also need to supervise the residence of TB patients to improve the correct disposal behavior of phlegm so that it can reduce the transmission of TB in the community. Different perceptions related to the place and method of phlegm disposal need to be facilitated by health workers, for example, the place used for the disposal of phlegm such as cups, cans, places that have been disinfected (Ministry of Health Republic of Indonesia, 2017) or other landfills. Health workers can work with rural cadres in charge of supervision in the home environment.

Most male participants still carry out smoking behavior even though it has been banned by health workers. Other studies suggest that the prevalence of smoking in TB patients is high (Jiménez-Fuentes et al., 2016) where active and passive smokers are independent risk factors for the incidence of TB and increase the progressiveness, severity, and risk of recurrence and mortality of TB disease suffered. The highest smoking behavior is carried out by men (Popovska & Zakoska, 2014). Health workers can provide education to special groups, especially men, to raise awareness not to smoke. Education also needs to be done on male adolescents to prevent smoking behavior, which can increase the risk of suffering from TB disease. In addition to education, health workers can intervene to change smoking behavior into other habits.

Compliance with TB patients for treatment is an important issue related to TB treatment carried out over a long period of time, which is approximately six months. The long duration of treatment is often the reason for treatment failure in TB patients (Danso et al., 2015). Encouragement from health workers and families is important to maintain TB patient compliance in TB treatment. The experience of failure in TB treatment causes TB patients to have to repeat from the beginning of TB treatment. Increased knowledge of TB patients about the impact that might occur if treatment is not carried out thoroughly needs to be done plus supervision of compliance with taking medication for TB patients at home.

In this study, there were many participants

who chose to separate their homes and separate rooms with their spouse or family. Isolation in family and community is a common issue found in TB patients (Tadesse, 2016). Participants even chose to stay alone away from home because they were afraid of infecting their families and even parting with their husbands due to TB disease suffered. The Previous study found that the knowledge and perceptions of families of TB patients related to understanding of TB disease and its treatment are still in a less category (Herawati et al., 2013). Health workers need to provide education about TB disease not only to TB patients but also to family members, so that stigma and isolation do not arise, and social isolation can reduce the quality of life for TB patients. The fulfillment of nutrition is closely related to the treatment of TB. Some studies state that providing nutritional support to TB patients, especially those in poverty, can increase the success of TB treatment in the community (Samuel et al., 2016). The provision of free nutrients that are high in protein needs to be done to support the fulfillment of nutrition for TB patients, especially in rural areas and in the community in the poverty line. TB patients should be educated to do self-management about tuberculosis treatment (Yu et al., 2014).

The benefit of preventing individuals from progressing to active TB, especially persons at high risk of reactivation, is widely accepted (Moonan et al., 2018). The results of this study indicate that TB patients have participated in efforts to prevent the TB transmission into the community, but need support from various parties both from health workers and families and surrounding communities.

Conclusion

TB patients in rural areas have made efforts to prevent transmission of TB in the community. Some TB patients have done the right way, and some still lack understanding regarding TB disease. Health workers need to educate and increase awareness of TB patients to be involved in preventing the transmission of TB in the community. The self-management ability of TB patients should be increased. This intervention also needs to be accompanied by supervision in the community with cross-sector collaboration or involving health cadres in supervising compliance and preventing TB transmission behavior in the community.

Funding:This study was funded by Universitas Jember Indonesia.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

The Influence of Gong Waning Music Therapy toward Anxiety in Patients with Acute Coronary Syndrome

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Submitted: 27-11-2019 Accepted: 21-02-2020 Published: 01-04-2020

Abstract

Anxiety becomes a psychological response when there is an attack and becomes a cause to bad treatment of Acute Coronary Syndrome (ACS) patients. Music therapy interventions to reduce anxiety need to be considered because it has no harmful effects. The study aimed to analyze the influence of gong waning music therapy toward anxiety in patients with ACS in Regional Public Hospital of dr. T.C. Hillers Maumere. The research design was quasi experimental with non-equivalent control group design. The sample was 32 patients divided into 2 groups with 16 patients per group taken by using purposive sampling technique. The intervention was implemented in three days. State Trait Anxiety Inventory (STAI) was used as the instrument of the study. The study used paired t-test, independent sample t-test and repeated anova for data analysis. The study showed that experimental group's trait anxiety and state anxiety were reduced (p 0.000 and 0.001). There was a difference on anxiety in experimental and control group (p 0.043 and 0.049). There was a bigger decrease of anxiety level in experimental group and it was statistically significant (p 0.000). The findings proved to support intervention of traditional music therapy to reduce anxiety. Nurses should not only focus on physical problems and ignore anxiety. It is hoped that nurses can use music therapy as a non-pharmacological adjunct therapy to help reduce anxiety of ACS patients.

Keywords: ACS, anxiety, music therapy.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

Acute Coronary Syndrome (ACS) is the emergency condition of Coronary Heart Disease (CHD) and is the most leading cause of death in the world that is increasing annually. Each year, around 1.8 million of Europeans die due to CHD (Townsend et al., 2016; Piironen et al., 2016). It is also reported that there are 7 million deaths in Asia-Pacific annually due to the disease (Ohira et al., 2013; Chan et al., 2016). American Heart Association (AHA) reports that as many as 16.5 million adult Americans suffer from CHD (Benjamin et al., 2018). CHD's prevalence increases in developing countries such as Indonesia, China, India, Iran, Turkey and Africa from 9 millions in 1990 to 19 millions in 2020 (Okrainec et al., 2004; Sanchis et al., 2016). Based on the Basic Health Research of 2013, the heart disease prevalence in Indonesia was 0.5% and it increased to 1.5% in 2018. The highest CHD prevalence (4.4%) was in East Nusa Tenggara (Ministry of Health of the Republic of Indonesia, 2018).

Anxiety becomes a psychological response when there is an attack and it is reportedly that more than 86.3% of ACS patients experience anxiety during their treatment in the hospital (Abu Ruz et al., 2010; Wan-Nor-Asyikeen et al., 2017). Anxiety is caused by chest pain, bad conditions, helplessness and death threat (Meneghetti et al., 2017). Anxiety becomes a risk factor to accelerate cardiac death (Parker et al., 2010; Roest et al., 2014). Roest et al. (2010) explained that 36% of morbidity and cardiac death are due to anxiety. Additionally, anxiety is related to acute level of the disease and prolonged treatment period and decreased quality of life (Abu Ruz et al., 2010; Nuraeni et al., 2016). Celano et al. (2016) in their meta-analysis reported that anxiety affects 1.2 times in accelerating death risks.

Anxiety can be managed by giving sedation, yet this action does not completely solve the problem, therefore, adjunctive non-pharmacological therapy such as music therapy are needed. The use of music therapy was chosen, because there were no side effects, non-invasive, inexpensive and easy to implement (Stern, 2013; Hole et al., 2015). Systematic reviews of research results have reported that music therapy not only reduces anxiety in heart patients but also in patients with mechanical ventilation and chemotherapy (Trape, 2010; Bradt, 2016). Music therapy is not only able to reduce anxiety but also stabilize physiological functions such as blood pressure and heart rate (Di Nasso et al., 2016). Boccara et al. (2018) in their study mentioned that with music therapy patients who undergoing coronary angioplasty require three times less midazolam.

Music as therapy is music that gives relaxing effect and hemodynamic system stabilization (Supnet et al., 2016). Leininger (1978) stated that the result of treatment would be optimal if adapted to local culture (Busher, 2016; Giger, 2016). Facai et al. (2016) in their study using Chinese traditional music therapy, showed psychological disorders can decrease in the experimental group. Currently, many studies in Indonesia use classical music from Europe to reduce anxiety, but the use of traditional music is still rarely chosen. While in Indonesia, there is a lot of traditional music that needs to be developed as a therapy. One of the traditional music in Sikka District is "Gong Waning". Gong Waning's music is the same as other traditional music in Indonesia, gong waning music gives a calm, peaceful and happy effect. When the patient relaxed it will stimulate the parasympathetic nerves, lower blood pressure and reduce anxiety (Loomba et al., 2012).

An initial study in Regional Public Hospital of dr T.C.Hillers Maumere in June 2018 showed that the nurses did not pay attention to patients' anxiety. The nurses focused more on physical problems and medical therapy, meanwhile anxiety affects to clinical deterioration of the patients. The initial study also showed that 7 out of 10 patients feeling worried, threatened, afraid of illness, often thinking about death and helpless. Based on the problems being discussed in prior, the researcher was interested to conduct a study on the influence of Gong Waning music therapy toward ACS patients'. The study aimed to analize the influence of gong waning music therapy toward anxiety in patients with Acute Coronary Syndrome in Regional Public Hospital of dr. T.C. Hillers Maumere.

Method

This study used quasi experimental with non-equivalent control group design. The population of the study was ACS patients being treated in Intensive Care Unit (ICU) of Regional Public Hospital of dr. T.C. Hilllers Maumere in 2019. Purposive sampling was used in the study. Based on the average visit of ACS patients in two months as many as 35 patients. Then the sample size can be calculated by the formula (Dahlan, 2013):

$$n1 = n2 = \left[\frac{(Z\alpha + Z\beta).SD}{d}\right]^2$$

Information:
n= sampel size
Zα= type I error (α 5%= 1.96)
Zβ= type II error II (β 10%= 1.28)
SD = standard deviations between groups (previous studies)
d= the minimum difference that is considered significant from the results of previous studies.

Based on the research of Alamsah et al. (2018), the standard deviation was obtained (5.29) and the minimum difference (4.51). Then the sample size needed in this study:

$$n1 = n2 = \left[\frac{(1.96+1.28).5.29}{4.51}\right]^2$$

n1=n2= 14.44. Round to 14.

To avoid samples that drop out, a correction of 10% is carried out (Sastroasmoro, 2014). So the sample must be added as much as 10%, so to get the overall sample size can be calculated by the formula: n'=n/(1-f)
Information:
n = sample size
f = drop out
n'= 14/(1-0.1)
n'= 16.04. Rounded up to 16 respondents for each group. The total sample size in this study were 32 respondents.

The inclusive criteria of the samples in the study were: 1) Patients have been diagnosed to suffer from ACS, 2) ACS patients come from Sikka district, 3) Patients were getting standard treatment of ACS, 4) Patients were those who got first attack, 5) Patients could communicate well and were willing to be respondents. The exclusive criterion of the study was patients did not follow the process of the study to completion.

The study took place in ICU of regional public hospital of dr. T.C. Hillers Maumere during May–August 2019. The instrument of the study was State Trait Anxiety Inventory (STAI). This instrument fit the problem of the study because there is no statement of psychological response so that it will not cause mistakes between anxiety response and physical effect of ACS. The validity test results obtained the correlation coefficient (0.526-0.897) and the reliability test results obtained Cronbach Alpha: 0.740. There were 2 parts of STAI: State Anxiety and Trait Anxiety; each contained 20 numbers. Each part was given score ranging from 20 to 80 (Julian, 2011).

Data collection includes: 1) Pre-test. Conducted after an ethics test and research permit are obtained, then introducing themselves to prospective respondents, explaining the purpose of the study and giving informed consent to the respondent to be signed. Keeping the environment calm and maintaining patient privacy by putting up barriers or lowering curtains, then measuring anxiety. 2) Intervention. The intervention was carried out for three days. In the experimental group, the patient was arranged in a comfortable position (lying down), the patient closed his eyes, keeping the environment calm and patient privacy. Patients listen to gong waning music for 30 minutes every morning through headphones/earphones (once a day). Music volume is determined by the respondent (maximum 60dB). In contrast, no music therapy intervention was applied to the control group. 3) Post-test. Post-tests were carried out after the intervention was given to the experimental group. Measurements were also made in the control group

Normality test results showed anxiety data both the experimental group and the control group were normally distributed, then the statistical test used paired t-test. Meanwhile, to know the difference of anxiety

between the experimental group and control group, independent sample t-test was used. In addition, repeated anova test was used to compare the average number of anxiety with more than two times measurement. This study has got ethical approval agreement from the research ethics commision of Medical Faculty of Nusa Cendana Univesity of East Nusa Tenggara Timur with number: 22/UN15.16/ KEPK/2019. Based on the results of the ethical decision, the study was only carried out on respondents who were already stable and if in the research process the respondent suddenly experiences deterioration, then the respondent is excluded from the study.

Results

Table 1 Distribution of Demographic Characteristics of Respondents (n= 32)

Respondent Characteristics	Experimental Group (n=16)		Control Group (n=16)		P value
	F	%	F	%	
Age					
Mean ± SD	59.2±5.5		57.6±5.6		0.989
Sex					
Male	11	68.8	12	75	0.350
Female	5	31.2	4	25	
Education					
Primary school	5	31.2	4	25	0.790
Junior high school	7	43.8	6	37.6	
Senior high school	3	18.8	5	31.2	
Higher education	1	6.2	1	6.2	
Occupation					
Housewife	4	25	4	25	0.628
Farmer	7	43.8	5	31.2	
Civil servants	2	12.5	2	12.5	
Retired	1	6.2	0	0	
Fisherman	1	6.2	2	12.5	
Entrepreneur	1	6.2	3	18.8	
Type of ACS					
STEMI	5	31.2	4	25	0.903
NSTEMI	9	56.2	9	56.2	
UAP	2	12.5	3	18.8	

Table 2 Distribution of Respondents Based on Anxiety (n=32)

Anxiety	Experimental Group (n=16)		Control Group (n=16)	
	Mean	SD	Mean	SD
Pre				
Trait Anxiety	43.62	6.22	38.37	6.54
State Anxiety	45.87	6.28	40.00	7.78
Post				
Trait Anxiety	42.87	6.35	38.06	6.52
State Anxiety	43.75	6.21	39.00	6.88

Table 3 Influence of Gong Waning Music Therapy toward Anxiety in Patients with ACS (paired t-rest) (n=32)

Anxiety	Experimental Group (n=16)			Control Group (n=16)		
	Mean	SD	P value	Mean	SD	P value
Trait Anxiety						
Pre	43.62	6.22	0.001	38.37	6.54	0.136
Post	42.87	6.35		38.06	6.52	
State Anxiety						
Pre	45.87	6.28	0.000	40.00	7.78	0.088
Post	43.75	6.21		39.00	6.88	

Table 4 Differences in Anxiety after Intervention between Experimental and Control Group (independent samples t-test) (n=32)

Anxiety	Experimental Group (n=16)		Control Group (n=16)		Mean Difference	Levene's Test	P value
	Mean	SD	Mean	SD			
Trait	42.87	6.35	38.06	6.52	4.81	0.758	0.043
State	43.75	6.21	39.00	6.88	4.75	0.832	0.049

Table 5 Comparison of Anxiety Before and After The Administration of Gong Waning Music Therapy (repeated anova) (n=32)

Anxiety	Experimental Group (Mean±SD)	Mean Difference	F	P Value	Control Group (Mean±SD)	F	Mean Difference	P value
Trait								
Pre	43.62 ± 6.22		12.00	0.000	38.37 ± 6.54	1.56		0.211
Post 1	43.12 ± 6.25	0.50			38.12 ± 6.34		0.25	
Post 2	42.87 ± 6.19	0.75			38.12 ± 6.56		0.25	
Post 3	42.87 ± 6.35	0.75			38.06 ± 6.52		0.31	
State								
Pre	45.87 ± 6.28		50.89	0.000	40.00 ± 7.78	2.16		0.105
Post 1	44.37 ± 6.24	1.50			39.75 ± 7.65		0.25	
Post 2	43.81 ± 6.15	2.06			39.81 ± 7.06		0.18	
Post 3	43.56 ± 6.15	2.12			39.00 ± 6.88		1.00	

Based on the demographic characteristics of the respondents in table 1. The highest average age is 59 years old. In addition it was dominated by male, junior high school education, employment as a farmer and type of ACS: NSTEMI. All aspects of characteristics obtains the p value > 0.05, meaning that there are no differences in characteristics both group.

Based on table 2. The highest average anxiety score in the experimental group and at the post-test all anxiety scores decreased.

Based on table 3, the result of paired t-test showed that the p value of experimental group was < 0.05 (trait anxiety = 0.001 and state aniety = 0.000), Ho was rejected while Ha was accepted. Hence, there was an influence of gong waning music therapy to ACS patient's anxiety.

Based on table 4, before the independent samples t test was tested, a homogeneity test (levene's test) was performed as a test requirement. Levene's test results obtained p value on trait anxiety and state anxiety (0.758 and 0.832), p value > 0.05, then the data have the same variant (homogeneous). Independent

samples t test results obtained p values in trait anxiety and state anxiety (0.043 and 0.049), p values < 0.05, so there are differences in anxiety after the intervention between the experimental and control groups.

Based on table 5, after 3 days of intervention the decrease in anxiety was higher in the experimental group The results of repeated anova test showed in the treatment group the p value (0.000) and in the control group the p value (0.211 and 0.105), so it can be concluded that there are differences in anxiety in the experimental group and there is no difference in anxiety in the control group.

Discussion

The study resulted p value of trait anxiety = 0.001 and state anxiety=0.000)<0.05, in which Ho was rejected and Ha was accepted. In other words, there was an influence of gong waning music therapy toward ACS patients' anxiety. Anxiety is the psychological response toward changes of physical condition and becomes a phenomenon that often occurs during treatments in the hospital. Anxiety is also a form of emotion which causes mental strain, and if it is not resolved the depressed emotion can disturb heart system and respiratory system (Thompson, 2009). Increased heart workload and increased oxygen demand can worsen myocardial perfusion. The decrease of myocardial perfusion can cause increased chest pain. According to Musey and Kline (2017), anxiety is closely related to chest pain frequency, impacts the activity intolerance and develops physical limitation. Anxiety also impacts reduce of immunity and increases cortisol's production (Lenze et al., 2011).

Anxiety is a form of unpleasant emotion dominated by fear, worries and uncontrolled discomfort toward threatening condition. There are many ways to reduce ACS patients' anxiety; two of them are through pharmacology and non-pharmacology therapies. The pharmacology therapy is given by sedation, yet this therapy causes many side effects that can worsen physical condition of the patients, such as nausea and vomits, bradycardia, hypotension, digestive disorder, physical activity's degradation, easily tired and delirium. Although there are standard operational procedures and instructions on sedation usage by doctor, patients still significantly experience anxiety (Chlan et al., 2013).

Non-pharmacology intervention such as music therapy can help reduce anxiety and also reduce administration of sedative medicine (Bradley et al., 2015; Yeo et al., 2013). Music can strongly distract attention that can also reduce anxiety. It is because music affects brain work with an effect of hemodynamics stabilization (Loomba et al., 2012). Clinical reports also show that music therapy reduces sedative and analgesic medicine administration (Good, 2008). A study by Berbel et al. (2007) compared the use of diazepam with music therapy and it showed that both diazepam and music therapy were effective in reducing anxiety. Unlike pharmacology therapy, music therapy does not have any side effect. Moreover, some studies show that music therapy can help reduce nausea and vomit (Zhou et al., 2011).

In Indonesia, a research using traditional music was shown on Alamsah et al. (2018) study. They used music from Kacapi Suling "Ayun Ambing" that gave influence to anxiety on patients who were doing hemodyalisis. Yusli and Rachma (2019) in their research also stated that there was an influence of Gamelan Jawa music toward elderly's anxiety level. This study was different from that of Rahman et al. (2017). They used traditional music of hariring kabayan in West Java, but there was no influence of the music toward anxiety. This was because patients focused on the pain they were feeling. A study in Turkey using Turkish music also showed there was no significant difference on anxiety decrease between two groups (Toker & Kömürcü, 2017).

Based on the study result, the mean difference of trait anxiety was 4.81, while mean difference of state anxiety was 4.75. The result of levene's test on trait anxiety (0.758) and state anxiety (0.832) was more than (>) 0.05, hence the data variant on trait anxiety and state anxiety was same. Additionally, p values in the study were 0.043 and 0.049, with p value less than 0.05, so it can be concluded that there was a difference of anxiety level between experimental group

and control group. This difference occurred due to the intervention of gong waning music therapy. Music therapy is a comprehensive, systematic and therapeutic management to help reduce anxiety, improve quality of life and fasten recovery (Bruscia, 2014; Aggelopoulou et al., 2017).

According to repeated anova test result, F value was obtained for both trait anxiety and state anxiety (12.00 and 50.89) with p value = 0.000. Thus, it can be inferred that the provision of gong waning music therapy influenced significantly toward ACS patients' anxiety. The control group did not show a significant change on anxiety level (p = 0.211 and 0.105). This study is similar to a meta-analysis study by Tao et al. (2016) explaining that Chinese traditional music can help reduce anxiety. Nilsson's study (2009), showed a different result in which there was no difference of anxiety level among the groups due to limited choice of music. Hanser (2014) explained that although there were many studies on music therapy with different results, the anxiety level of all traces of patients with heart disease decreased after listening to music.

This study showed that the state anxiety level was higher than trait anxiety level both in experimental group and control group, while trait anxiety in control group tended to settle. According to Leal et al. (2017), the higher the trait anxiety level, the higher state of anxiety level it is. Although during the study patients did not say they were worried, they were susceptible toward various situations making them anxious. Based on Spielberger's statement (2010), he explained that there was a relationship between trait anxiety and state anxiety. The higher the level of trait anxiety, the higher level of state anxiety it is that the patients are experiencing. Level of someone's trait anxiety tends to be settling because trait anxiety refers to his/her characteristics or relatively sedentary trait that directs someone to interpret a condition as threats affected by previous experience. This study is in line with the study conducted by Miličić et al. (2016) showing that there was a higher level of state anxiety than trait anxiety (p 0.001). Likewise, the study of Maisyaroh et al. (2015) showed that 46.4% of respondents had moderate state anxiety originating from mild trait anxiety. Trait anxiety is not directly seen on someone's behavior, but it can be seen from the frequency of state anxiety which conditions can change depending on recent situations.

Based on the findings of the study, it is shown that state anxiety score decreased for 1.50 on the first day of gong waning music therapy. This number is higher than that in control group (0.25). On the second day, the state anxiety level decreased for 2.06. Meanwhile, the score of state anxiety decreased up to 2.12 on the third day. It means that when patients listened to gong waning music for 3 days, their anxiety level decreased for 2.12. Trait anxiety and state anxiety in the control group tend to persist. Anxiety decrease was due to strains of gong waning music that could create relaxing, happy and calming effects. The study is also in agreement with nursing theory from Leininger stating that nursing intervention will be optimal if it is linked to local cultural elements. This study will definitely add to the treasury of scientific studies on the influence of traditional music therapy toward anxiety decrease.

Emphasis on scientific approach has become a key to develop and apply traditional music therapy to overcome anxiety. Nurses should pay attention to anxiety and provide comprehensive nursing care. Nurses should not only focus on physical problems and ignore anxiety. This study implies on the process of nursing care and becomes foundation for anxiety management in health services. Nurses can use traditional music therapy to reduce anxiety because music is medicine to patients and it has no harmful side effects.

This study has a limitation that is the researcher does not have data about the use of sedation.

Conclusion

Gong waning music therapy can help decrease ACS patients' anxiety. This research supports the application of music therapy in overcoming anxiety. Nurses should not only focus on physical problems and ignore anxiety. It is hoped that nurses can use music

therapy as a non-pharmacological adjunct therapy to help reduce anxiety of ACS patients.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Factors Related to the Low Nutritional Status among Tuberculosis Patients

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Submitted: 14-01-2020 Accepted: 18-03-2020 Published: 01-04-2020

Abstract

Tuberculosis and malnutrition are serious problems. Tuberculosis causes malnutrition that potentially lessen patients' immunity and increase the risk for activating tuberculosis. The purpose of this study was to identify the factors related to the low nutritional status among tuberculosis patients in Malang City. This research applied a corelational study. The subjects involved were tuberculosis patients with BMI<18.5. Chi-square and Fisher Exact Test were used to analyse the identified factors. Moreover, binary logistic regression to identify factors related to the low nutritional status among tuberculosis patients in Malang City. This study found almost half of participants (46.8%) had poor family knowledge about dietary TB patients. More than half of the participant's culture (62.5%) was abstinence. A more than half of participant (59.6%) had Moderate malnutritions. There was no significant correlation between low nutritional satus and variable of gender p=1.000, education p=0.404, family knowledge p=0.767, and culture p=0.310. The significant correlation was occupational status with p=0.043. The binary logistic regression showed that tuberculosis patient with unoccupied are 1.286 times more likely to have a low nutritional status. Occupational status was the one factor that significantly related to the low nutritional status among TB patients in Malang City.

Keywords: Nutritional status, relating factor, tuberculosis.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

The prevalence of pulmonary TB based on the Doctor's Diagnosis History in East java and Malang, East Java is 2,161 and 98,566 cases, respectively (Riskesdas, 2018). Pulmonary TB disease suffered by individuals results both physically, mentally, and social life. Physically, if a person with pulmonary TB does not receive treatment, after 5 years the patient will die (50%), will heal themselves with good immune system (25%), and will become a chronic case (25%). Physical is not good will make someone lose the opportunity to actualize themselves due to physical limitations possessed. These limitations will hamper disrupting physical well-being, which in turn will have an impact on low quality of life (Kusnanto, Pradani, & Karima, 2016).

The relationship between TB and malnutrition has long been known. TB worsen malnutrition that then weakens immunity and increase the risk for activating latent TB. A previous study found that a majority of patients had chronic and severe undernutrition which persisted even after successful treatment. These findings indicate the important of nutritional support during treatment of pulmonary TB (Bhargava et al., 2013). A study reported that TB incidence among respondent with BMI <18.5 was approximately 3% of the population or 260.2 per 100,000 person-years equal to11.7-fold higher than that among participants with normal BMI (Cegielski, Arab, & Huntley, 2012).

A study reported that majority of the tuberculosis patient with active tuberculoasis had low nutritional status, which IMT score <18,5. This situation affects the nutritional status of a person which affects the body's endurance (Lazulfa et al., 2016). Most individuals with active tuberculosis experience weight loss and some of them showed signs of vitamin and mineral deficiency at diagnosis. Weight loss among patients with TB can be caused by several factors, including reduced food intake due to loss of appetite, nausea, and abdominal pain; loss of nutrition due to vomiting and diarrhea and metabolic changes due to disease. Low body mass index (BMI) (below 18.5 kg/m2) and lack of weight gain with TB treatment are associated with an increased risk of death and relapse of TB and can be indicator of TB severity, poor treatment response and/or presence other comorbid conditions (WHOa, 2013).

According to the Depkes (2011), about 75% of patients with pulmonary TB mostly come from economically productive age group (15-50 years). It is estimated that an adult pulmonary TB patient, will lose an average working time of up to 3 to 4 months. This results in a loss of annual household income of around 20-30%. This can decrease the consumption of quality food (Kusnanto et al., 2016). Another study by Noviyani et al. (2015), work activities carried out development of social relationships that will improve one's knowledge compared to people who do not work, so that information related to good nutrition among people with tuberculosis will be more updated.

There were numerous factors influence the low level of nutrition. A previous study (Gurung et al., 2018) reported that working conditions and food intake frequency were significantly associated with calorie intake in TB patients. It also found that the amount of calories, food frequency per day, types of TB, and nutritional status during registration were significantly associated with recent nutritional status among TB patients.

According to Dodor's (2008), nutritional status is significantly associated with marital status, income per month, education level, trust to avoid certain types of food and close family size at the time of starting TB treatment. Two months after starting treatment, changes in BMI were significantly associated with age groups, marital status, employment status, level of education and beliefs to avoid certain types of food. In addition, the success of patients suffering from active phase pulmonary TB to be able to maintain good nutritional status cannot be separated from the support of family's roles. In general, participants said that it was their family (wife/husband, parents and children) who often kept on endlessly to motivate participants to always maintain good health. The family performs health care functions ranging from routinely delivering control, reminding taking medication, to motivation to eat while providing healthy food for

participants (Masruroh, Kurnia, & Melizza, 2019).

Indonesia, which consists of various tribes and cultures, has diverse socio-cultural conditions. Socio-cultural which is a human-human relationship, is often influenced by myths, norms, values, beliefs, habits related to cultural patterns and is the effect of various accesses, which can be in the form of access to food, access to information and access to services and capital owned (Kasmini, 2012). Furthermore, according to Leininger (2002) reported that transcultural nursing refers to culture related to healthcare delivery that can affect disease management and the status of individuals' health and well-being. Transcultural nursing have improved nursing care to diverse populations by providing a means to overcome difficulties and challenges when facing with culturally diverse patients. Furthermore, in this study will exemine culture as a factor that rlated to the low nutritional status (Albougami, Pounds, & Alotaibi, 2016).

This study aims to determine factors related to the low nutritional status of tuberculosis patients. Those factors consist of gender, occupational status, family knowledge, and culture. The finding factors can lead to apply properly treatment for tuberculosis patient with low nutritional status.

Method

This study was used a corelational study with cross-sectional design. Purposive sampling was applied using some inclusion criteria namely had low nutrional status (BMI<18.5), active tuberculosis, able to communicate, and agree to be a respondent. There were 47 TB patients and their family who met the criteria out of 63 TB patients in Kedungkandang and Ciptomulyo public health centers.

The data were collected by using questionnaire and physical examination. The questionnaire contains of patient's characteristics, family knowledge, culture, and occupational status. Patient's characteristics included age, gender, educational level, and occupational status status. Family knowledge questionnaire was developped by Melizza (2018), consisted of 'right' and 'wrong' questions (right answer = 1 & wrong answer = 0) and included 15 items. The realibility of the family knowledge questionnaire was α= 0.928. Meanwhile culture questionnaire consist of 'yes' and 'no' questions (yes = 1 and no = 0) and included 3 items. The realibility of the culture questionnaire was α= 0.605. The total score of each questionnaire was categorized poor = ≤ 55%, sufficient = 56–75%, and good = 76–100%. Correspondence's body weight also must be scaled, as well as their height. Severe malnutrition was categorized as BMI <16 kg/m2, moderate malnutrition as BMI 16–18.4.

The study was obtained permission from the participant before collected the data. The study was conducted in august 2018 with ethical permission from the Ethical Review Board (ERB) committee of University of Muhammadiyah Malang (ERB No.E.5.a/259/KEPK-UMM/VIII/2018).

Data Analysis

The descriptive data analysis applied to analyse patients' characteristics namely age, gender, education, occupational status, and nutritional status. The analysis applied Chi-square and Fisher Exac Test because of the data was not normally distributed. The correlation between age, gender, education, culture occupational status, family knowledge and low nutritional status were analized using Fisher Exact Test because of the expected count more than 25% . While to identify the most significant factor that related to the low nutritional status among tuberculosis patients in Malang City used binary logistic regression due to the data was not normally distributed.

Results

Demography Data

Table 1 showed that most of the participants (74.5%) were women. Approximately, 35% participants had elementary school for educational level. More than half of the participants (55.3%) had employed, had good family knowledge about dietary TB patients (54.8%), abstinence culture (62.5%), and (59.6%) Moderate malnutritions.

Table 1 Demography Data of Participants

Demography Data	Number	Frequency
Age (46 ± 11.64)	-	-
Gender		
a. Male	12 persons	25.5%
b. Female	35 persons	74.5%
Education		
a. Not taking formal education	1 person	2.1%
b. Elementary School	16 persons	34.0%
c. Junior High School	15 persons	31.9%
d. Senior High School	13 persons	27.7%
e. Undergraduate	2 persons	4.3%
Occupational status status		
a. Employed	26 persons	55.3%
b.Unemployed	21 persons	44.7%
Family Knowledge		
a. Good	25 persons	53.2%
b. Poor	22 persons	46.8%
Culture		
a. Abstinence	35 persons	62.5%
b. Non-Abstinence	12 persons	37.5%
Low Nutritional Status		
Moderate Malnutritions	28 persons	59.6%
Severe Malnutritions	19 persons	40.4%

Table 2 Crosstabulation between Independent Variables and Low Nutritional Status among TB Patients.

Independent Variables	Low Nutritional Status		P
	Severe malnutrition	Moderate malnutrition	
Gender[1]			
Men	5 (26.3%)	7 (25%)	1.000
Women	14 (73.7%)	21 (75%)	
Education[1]			
No education	1 (5.3%)	0 (0%)	0.404
Formal education	18 (94.7%)	28 (100%)	
Occupational status[2]			
Employed	7 (36.8%)	19 (67.9%)	0.043*
Unemployed	12 (63.2%)	9 (32.1%)	
Family Knowledge[2]			
Good	11 (57.9%)	14 (50%)	0.767
Poor	8 (42.1%)	14 (50%)	
Culture[1]			

Independent Variables	Low Nutritional Status		P
	Severe malnutrition	Moderate malnutrition	
Abstinence	16 (84.2%)	3 (15.8%)	0.310
Non- Abstinence	19 (67.9%)	9 (32.1%)	

Note: [1]Fisher Exac Test; ([2]) = Chi-square
*Correlation is significant at the .05 level (2-tailed)

Table 3 Determinant of the Low Nutritional Status among Tuberculosis Patients

Variable	B	Sig.
Ocupational status	1.286	0.039*

*Correlation is significant at the .05 level (2-tailed)

Table 2 showed that participants who suffered the most of moderate malnutritions (75%) and severe malnutritions (73%) were woman. The most of partisipant that have low nutritional status in category of moderate malnutritions are educated participants (100%). The majority of participants who worked experienced moderate malnutritions (67.9%), while respondents who did not work mostly experienced severe malnutritions (63.2%). Eleven people have good knowledge, the percentage of participants who experience severe malnutritions is quite high at 57.9%. Furthermore, 84.2% of participants who abstained from certain foods experienced low nutritional status in the severe category. Among identified factors, only occupational status that significantly correlated to low nutitional status among TB patients ($p < .05$).

Table 3 showed that tuberculosis patient with no occupational status are 1.286 times more likely to have a low nutritional status.

Discussion

The results also showed that gender was not associated with low nutritional status in patients with tuberculosis. This is supported by research conducted by Hoyt et al. (2019) which explained that gender is not related wth nutritional status among people with tuberculosis. Another reason is also mentioned because biological factors, namely women have a greater ability to adapt to starving (Bharvaga et al., 2013).

In addition, education is also not related to the low nutritional status of patients with tuberculosis. The statement is not in accordance with the research of Widianti (2007) in Putri, Harmayetty, & Utomo (2016) which stated that through knowledge obtained during formal education, people with highly educated will have broader knowledge than those with low education, in this case regarding health knowledge. Nevertheless, education can also be connected to age and knowledge. Since, based on the demographic data, approximately 35% of participant had elementary school of educational level. This finding in line with a previous study by Hoyt et al. (2019) that reported years of education did not differ significantly between subjects with severe malnutrition, moderate malnutrition and normal BMI among people with Tuberculosis.

Another research finding stated that family knowledge is not related to low nutritional status of patients with tuberculosis. As explained above, the knowledge level not only corresponds with formal education but also age and social interaction. The results of the research showed that even the family have good knowledge about tuberculosis, approximately 60% of the participant had severe malnutrition. This condition might be occurred due to information accessibility is not spread well among family member. However, the spread of information will increase individual knowledge and understanding regarding disease information (Driscoll et al., 2009 in Mohammadpour et al., 2015). Essentially, knowledge also can be influenced by people interaction. It helps an individual to develop the knowledge and hopefully, an individual will treat himself well (Mohammadpour et al., 2015).

Culture does not influence low nutritional status in TB patients. It is related to abstinence of consuming certain foods.

According to Dodor (2008), belief to a certain food can affect nutritional status in TB patients. Shivalli et al. (2015) revealed that culture is responsible for the occurrence of the disease. Nutritional treatment of TB can be solved by identifying and preventing the cause of poor nutrition through education, counseling, and dietary habit. In a severe case, nutritional treatment aims at reducing death risk and rehabilitation period (WHOb, 2013). Somehow, several foods should be avoided due to cough stimulus can distract the respiratory system of TB patients.

Furthermore, the results indicated that occupational status relates to low nutritional status in TB patients. Tuberculosis patient with unemployed are 1.286 times more likely to have a low nutritional status. This result might be caused by the activity will led them to improve their intake nutrition. The percentage stated that working and not working patients are not deeply different. It is in accordance with Dodor (2008), nutritional status is related to marriage status, monthly income, and avoiding certain foods. Occupational status surely affects individual income. Winetsky et al. (2014) explained that low access to nutrition corresponds with the low economy condition, difficulty in obtaining nutritional food, and a geographical factor which affect the occurrence of TB.

Conclusion

There are numerous factors that influence nutritional status, such as age, gender, education, occupational status, family knowledge, and culture. However, the most dominant factor is occupational status. Tuberculosis patient with unemployed are 1.286 times more likely to have a low nutritional status.The occupational status is highly related to nutrition intake and family attention to treat TB patients.

Acknowledgment

The author would like to thank the University of Muhammadiyah Malang – Indonesia and also thank to the all participant who willing to join this study.

Conflict of interest

There was no conflict of interest declare in this study.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Comparison of Four-Level Modification Triage with Five Level Emergency Severity Index (ESI) Triage Based on Level of Accuracy and Time Triase

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Submitted: 06-07-2019 Accepted: 01-04-20 Published: 08-04-2020

Abstract

The triage system currently recommended by the Association of Emergency Physicians (ACEP) and Emergency Nurses Association (ENA) is a five levels triage, Emergency Severity Index (ESI) due to more structured, concise, and clear. Cibabat Hospital used a relatively new triage of four modified levels of the Australian Triage Scale (ATS) which accuracy and time triage have not been evaluated. The purpose of this study was to compare the four level triage of modification of ATS and five levels of ESI triage based on accuracy and time triage. The researcher used a quantitative quasi-experimental design with samples of triage activities totaling 38 in the control group and 38 intervention groups, using accidental sampling techniques. Univariate analysis consisted of frequency distribution for nurse characteristics, time triage and accuracy, bivariate analysis used the Mann-Whitney test. The results showed there were no differences, triage modification of ATS with ESI triage in accuracy (p-0.488), and length of triage (p-0.488) ESI triage accuracy was in the expected triage category (76.3%), under triage (13.2%), and over triage (10.5%). Triage modified ATS, expected triage (73.7%), under triage (18.4%), and over triage (7.9%). ESI triage has more expected and less under triage than ATS modification triage. Under triage caused prolong waiting times, unexpected risks, increases morbidity and mortality. Based on the length of time, ESI triage averaged 167 seconds, triage modification of ATS an average of 183 seconds. ESI flowchrat is easier to understand because is simple, has slight indicators in each category. Conclusion of this study is there is no significant difference in the level of accuracy and duration of triage. However, based on data distribution, ESI triage gives more expected triage decisions, less under triage and 16 seconds faster. Suggestions given to the Cibabat Hospital, can use ESI triage as an alternative triage assessment option because easy to use, structured, simple, and clear.

Keywords: Accuracy, Australian Triage Scale (ATS), Emergency Severity Index (ESI) Time Triage, triage.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

Emergency department (ED) is one of the most vital service units in saving the lives of patients who get emergencies situation. Nurses are health workers with the biggest and holding presentation an important role in service delivery health. Nurse in ED often exposed to various sources of danger can threaten his life and health. Nurses can also get an accidents due to having to provide fast and accurate when they do triage assessment (Ramdan & Rahman, 2017). Triage is an important component of ED in the management of these emergency patients. Triage is defined as the process of evaluating patients to prioritize administration of care based on the urgency of existing clinical conditions (FitzGerald, Jelinek, Scott, & Gerdtz, 2009). Accuracy in determining triage criteria can improve the flow of patients who come to the emergency department, maintain unit resources so that they can focus on handling truly critical cases, and transfer non-emergency cases to appropriate health facilities. Triage decisions will place patients on a triage scale. Three types of decision of triage are expected triage, over triage, and under triage. Inappropriate triage decisions will threaten patient safety, increase mortality and morbidity inappropriate use of resources. Patients with over triage make the patient in the room that is not right and under triage makes the patient seriously wait longer (Considine, Ung, & Thomas, 2001). Wait longer made length of stay in Emergency departement increase. Lengthening the period of hospitalization will also add to the activities and workload of nurses (Nurmansyah, Susilaningsih, & Setiawan, 2014; Ardiyani, 2015). Although the workload does not have an impact on job satisfaction, it must still be adjusted the workload in order to improve service quality to the patients (Safdar, Susilaningsih, & Kurniawan, 2019).

Another important thing in triage is time triage. Time is considered an important tool for measuring the quality of services at the ED (Bukhari et al., 2014). According to Khankeh, Zavareh, Naghdloo, Hoseini, and Rahgozar in 2013 stated that triage can significantly reduce the waiting time interval for patients entering the ED to receive treatment services and increase patient satisfaction. Another study conducted by Levsky, Young, Masullo, Miller, and Herold in 2008 reinforced the results of the Khankeh study, which explained that the implementation of the use of triage and treatment programs in community hospitals was closely related to reducing patient waiting time. The duration of triage is the time used by nurses in conducting triage studies.

The triage system used by emergency departments in world has many variety. Starting from two levels, three levels, four levels up to five levels triage. The triage system that is currently being developed is a five-level triage. Some triage five levels are Emergency Severity Index (ESI), Canadian Triage Acuity Scale (CTAS), Manchester Triage Scale (MTS), and Australian Triage Scale (ATS) (Gilboy, Tanabe, Travers, & Rosenau, 2011). ESI is the most superior triage than the others. ESI is easier to use, reduces subjectivity in determining triage decisions, more accurate, can predict resources who needed by patients and has a good of validity and reliability (Elshove-Bolk, Mencl, Rijswijck, Simons, & Vugt, 2007; Christ, Grossmann, Winter, Bingisser, & Platz, 2010; Mace & Mayer, 2008; Golzari, Soleimanpour, Raoufi, Salarilak, Sabahi, Nouri, & Heshmat, 2014).

The triage system in Indonesia has not been standardized so that its use in various regions varies greatly. In several major hospitals in Indonesia which adopted the ATS triage, Cipto Mangunkusumo Hospital in Jakarta used ATS modification which shortened to 3 levels. Karyadi Semarang Hospital also modifies ATS to 3 levels based on color categories (red, yellow, and green). Hasan Sadikin Hospital Bandung modifies ATS into 3 categories, mild, moderate, and severe. The same thing was done by Cibabat Hospital which adopted ATS but they shortened into 4 levels.

The application of this triage system is still relatively new because it was first used at the end of November 2016, where previously there was only a primary and secondary triage at emegency departemen in Cibabat Hospital, so it was not known what patients were included in the emergency category. This caused a classification error where the patient

who is in the false emergency enters a true emergency patient. According to the Cibabat Hospital annual report data in 2015 it was found that false emergencies were 54% while true emergencies were only 46% (RSUD Cibabat Cimahi, 2015). So, its needed to decrease the number of false emergencies by using new triage which reduces subjectivity in determining triage decisions. ESI is of choices system triage which easy to use and more accurate.

Method

The design of this study is quantitative research with a quasi experimental approach. This researched setting in Emergency Unit Cibabat Hospital. The Data was collected in Oktober 2017. Sample of this research was 38 triage activity from 15 nurses who accepted to join in this study. It used comparatif numeric unpaired with Zα = 1.96 and Zβ = 1.28 (Dahlan, 2013). There were two groups, the control group was patients with assessment used four levels of ATS modification triage while the intervention group was used the five-level ESI triage method. The study sample was a triage activity of 38 triage studies conducted by 15 nurses. The research instrument used the observation format of level accuracy and time triage of ATS modification triage and ESI triage format. Univariate analysis consisted of frequency distribution for nurse characteristics, time triage and accuracy, bivariate analysis used the Mann-Whitney test. ESI has a good validity 0,68 (Christ, Grossmann, Winter, Bingisser, & Platz, 2010). This study was approved by the ethics committee of medical faculty of Padjadjaran University in October 2017. Informed consent was given to triage nurses regarding the title, purposes, and advantages of the study.

The level of accuracy was done by collected data twice. First, the nurses used a triage of four levels of ATS modification in 38 patients. Second, the same nurses carried out triage used five levels of ESI triage and triage four levels of ATS modification in 38 other patients. Each triage assessment conducted by nurses is also accompanied by an assessment by Gold Standard. All result by nurses compared with result from Gold Standar. There were three results of accuracy triage, Over triage, Expected triage, and Under triage. In time triage, a triage assessment by nurses was conducted twice

Table 1 Level of Accuracy of the Triage Method Four Levels of ATS Modification and Five-Level ESI Triase Method

Triage	Expected Triage		Over Triage		Under Triage		(%)
	(f)	(%)	(f)	(%)	(f)	(%)	
ATS modification	28	73.7	3	7.9	7	18.4	100
ESI	29	76.3	5	10.5	4	13.2	100

Table 2 Mann-Whitney Test Difference Test Accuracy Levels

Triage	n	Mean Rank	Sum of Ranks	Z	p-value
ATS modification	38	37.17	1412.50	-693	0.488
ESI	38	39.83	1513.50		

Table 3 Time Triage Overview using the Four Levels of ATS Modification and Five-Level ESI Triage Method

Triage	n	Mean	Categories	Std Deviation	Min	Max
ATS modification	38	183 seconds (3 minute 3 seconds)	standard	54.22909	75.00	290.00
ESI	38	167 seconds (2 minute 47 seconds)	standard	48.48889	72.00	260.00

Table 4 Time Triage Test Mann-Whitney Test

Triase	n	Mean rank	Sum of Ranks	Z	P-value
Teriase modifikasi ATS	38	41.54	1578.50	-1.200	0.230
Triase ESI	38	35.46	1347.50		

used triage four levels of modification of ATS and triage of five levels of ESI in the same patient. The two triage system was compared how long it would taken.

Results

Based on the table above it is known that ESI triage compared to the triage of four ATS modification levels is given more expected than overtriage and undertriage categories.

Based on table 2 above it is known that the value of p-value > alpha or 0.488 > 0.05 it showed that the accuracy of triage four levels of ATS modification used by the Cibabat Hospital with ESI triage is not significantly different.

Based on table 4, it is known that the average time triage used four modification levels of ATS is 183 seconds or 3 minutes 3 seconds. In triage of five ESI levels the average time triage was 167 seconds or 2 minutes 47 seconds. So, ESI faster than ATS modification.

Based on table 4 above, it is known that the value of p-value > alpha is 0.230 > 0.05 thus the time triage used four levels of ATS modification with ESI triage duration is not significantly different.

Discussion

Based on the results of the study, it is known that there was no significant difference indicated by the use of four levels of ATS modification triage with five levels of ESI triage both in terms of accuracy and length of triage. Statistically, the two results showed there is no difference, but from the distribution of data there is a difference 16 seconds from the two triages where the ESI average is 16 seconds faster than four ATS modification triage. ESI triage on average takes 2 minutes 27 seconds while triage four modification levels of ATS for 3 minutes 3 seconds. The fastest time needed for ESI in 72 seconds and the longest takes 4 minutes 20 seconds. In triage four modification levels of ATS the fastest time used is 75 seconds and a maximum of 4 minutes 50 seconds. The fastest time difference is only 3 seconds and the longest difference is 30 seconds. From the minimum and maximum time in both triages there is a considerable distance. This is due to the variety of cases of patients with different severity.

Based on the difference in time in the triage period above, it is known that the use of ESI triage is faster than the triage of four levels of ATS modification. Although only slightly different, we must know that triage time is an important element of triage use. When it becomes one of the important factors in making the right decision for triage, the information needed must be collected quickly and decision-making must be done on time (Dadashzadeh, Abdolahzadeh, Rahmani, & Ghojazadeh, 2013).

If we faster to take triage time, so the patient will be soon transferred from triage room to emergency room. The use of shorter triage will reduce patient waiting time for treatment and this will increase patient satisfaction during the ED (Khankeh, Zavareh, Naghdloo, Hoseini, & Rahgozar, 2007). According to Villa, Weber, Polevoi, Fee, Maruoka, and Quon in 2018, based on the results of their research, it is known that the reduction in the length of triage can be done by implementing ESI triage in the ED. The reduction in time was mainly due to nurse intervention focused only on the questions posed by ESI without being accompanied by patient administrative data. The fast triage time will have a positive impact on the quality of care in the hospital emergency departement. Besides being fast, ESI triage also has other advantages, including simple, easy to understand, and easy to apply. According to Elshove-Bolk, Mencl, Rijswijck, Simons, and Vugt in 2007, the nurses stated that ESI was easier to use, reduced subjectivity in determining triage decisions and was more accurate than other

triage systems. This was also confirmed by statements from several emergency nurses in Cibabat Hospital using ESI triage. They stated that ESI was very simple, there were not many indicator points or signs and symptoms in each category, the flow of sorting was also easy to understand. But sometimes it is rather confused when determining the resources according to patient needs.

As we know the philosophy of triage prioritizes are accuracy, and fast. When viewed from accuracy, both triage four levels of modification of ATS and ESI triage were not significantly different. This shows that both triages are equally accurate to use. But we need to examine it more deeply based on the results of triage decisions that are obtained whether over trage, ecpexted triage, and under triage. These three decisions provide a clearer picture of the results of the accuracy of the triage assessment. In under triage and expected triage categories, ESI triage is better than the triage of four ATS modification levels.

Over triage is the result of a triage assessment decision where the patient receives a triage code that is higher than the actual level of urgency. Over triage in ESI triage is 10.5% while in triage four modification levels are 7.9%. There was a difference of 3.4% between the two triages where ESI triage has a good contributed than the triage of four ATS modification levels. Overtriage decisions can result in short waiting times for medical intervention. However, it will have a negative impact on other patients who are waiting at the ED because they have waiting time longer. Significantly, the overtriage decision does not have consequences for the patients, instead patients will benefit from being given action first by health worker compared to other patients who are at the lower levels. Overtriage does not have a direct effect, but an Overtriage can interfere with the provision of health services and provide risks to other patients (Ekin & Mophet, 2015; Hinson et al., 2018).

Expected triage is the result of a triage assessment according to a triage decision where the patient receives a triage code that suitabel with level of urgency of the patient. The expected triage decision on ESI triage is 76.3 while the triage of four ATS modification levels is 73.7 with a difference of both at 3.4%. This shows that ESI triage gives more appropriate triage decisions compared to triage four levels of ATS modification. This decision can optimize the time for patient medical intervention and reduce adverse risks. This decision is expected to be carried out by triage nurses while carrying out their duties. The right decision will provide the right rescue action.

In under triage category, ESI triage was a smaller percentage of 13.2% compared to triage four ATS modification rates of 18.4% so that the difference obtained was 5.2%. Under triage is the result of a triage decision where the patient receives a lower triage code than the actual one. This decision has the potential to produce prolonged waiting times for medical intervention and risk of poor outcomes. Under triage is a medical error that can increase the number of mordibitas and mortility. Patients who are supposed to get treatment first are not prioritized so that the patient's life cannot be immediately give treatment. Under triage also directly impacts patient safety due to long waiting times (Ekin & Mophet, 2015). Patients will be more need a long time to get the medical treatment. Of course this will greatly endanger the lives of patients, especially if the patient's level of emergency is in level one . Because the triage nurse provides a level below the patient does not receive priority treatment by health workers.

Accurate and fast triage decisions have a significant impact on patient management. Accuracy triage decision making is the based for determining priorities to provide emergency care so that it has a positive impact on patient care outcomes (Dadashzadeh, Abdolahzadeh, Rahmani, & Ghojazadeh, 2013). The accuracy of the use of triage can not be separated from the ability to decide the patient's emergency. According to Smith and Cone 2010, triage decision making is based on critical thinking, intuition, and experience. Experience has a tremendous impact on decision making. Autonomy, satisfaction, frustration, and feelings of uncertainty are some of the experiences in triage decision making. Nurses who have more years of experience as triage nurses will increase consistency in decision making.

The same thing was stated by Dadashzadeh, Abdolahzadeh, Rahmani, and Ghojazadeh in 2013, that the more experience a nurse has, the more consistent in making decisions. Besides experience, intuition has an important role in triage decisions. Interventions according to decision-making chosen through intuition that is owned by nurses will make it more consistent in carrying out all their duties and responsibilities (Smith & Cone, 2010).

Conclusion

Based on the results of this study, there was no significant difference used triage of four levels of modification of ATS and triage of five levels of ESI in accuracy and time triage. However, based on the distribution of data it can be concluded that the level of accuracy in the ESI triage results in a greater expected triage and a smaller under triage than a triage of four levels of ATS modification. Under triage causes long waiting times, unexpected risks, increases morbidity and mortality. The length of time required by the two triages were not exceed the standards time by the Ministry of Health (≤5 minutes) (Departemen Kesehatan RI, 2011). ESI is easy to used because the flow is concise, clear, and structured as well as simple in making decisions in each indicator of existing categories. However, nurses at the Cibabat Hospital are sometimes confused in determining the amount of health workforce resources needed by patients.

Based on the results of the study stated that there is a tendency to use five levels of ESI triage. However, because the results obtained were not significantly different, the hospital could use a triage of four levels of ATS modification or a five-level triage of ESI. ESI Triage can be an alternative choice for using triage studies because it is applicatively easier to understand, faster, and accurate.

The results of this study can be used as further research related to the use of the five level ESI triage method in Emergency Services with several hospitals with the same criteria (multy center) so that more varied types of patient cases are obtained, nurse skills are more varied, and the number of patients is more many.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Demonstration and Audio-Visual Methods for Improving Knowledge, Attitude and Skills of Breast Care among Pregnant Women

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Submitted: 13-02-2020 Accepted: 08-04-2020 Published: 12-04-2020

Abstract

One of the physical changes during pregnancy is their breasts that usually get larger and heavier, the areola mammae becomes darker and the nipples get bigger. These conditions cause the breasts need to be treated in preparation for exclusive breastfeeding. However, in reality, there are many pregnant women who have not done much breast care due to their ignorance of its importance and lack of information. The aimed this study was to identify the effective of audio-visual and demonstration method for improving knowledge, attitude, and skills of breast care among pregnant women in Aceh. This study was used a pre-test post-test design with a control group (37 of pregnant women) and intervention group (36 of pregnant women). The intervention group was given health education about breast care using demonstration method, while the control group was given by watching videos. The instruments used in this study was a questionnaire about breast care and checklist to assess breast care skill. The instruments was developed based on the existing theory. Data was analyzed using t-independent test ($p<0.05$). There were significantly difference of knowledge (72.83 + 8.48 vs. 45.43 +12.06), attitudes (58.76 +6.20 vs. 46.83 + 4.58), and skill (73.74 + 7.98 vs. 56.17+ 10.62) of breast care between intervention and control group among pregnants women ($P<0.001$). Furthermore, the scores of knowledge, attitudes, and skills of breast care among pregnant women using demonstration (intervention groups) method were more higher compared pregnant women using audio-visual method (control groups). Health education using demonstration method is more effective for improving knowledge, attitudes, and skills of breast care among pregnant women than audio visual method. Therefore, demonstrations and re-demonstration using guideline should be implement for women with guidance during pregnant.

Keywords: Audio-visual, breast, care, demonstration, education, health, videos, watching.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

Pregnancy causes a pregnant woman to experience hormonal changes in her body, causing various physiological and psychological changes. One of the changes occurs in the breast. Changes in the breast have started since the fourth week of pregnancy. These changes occur due to the increased blood flow to the breast area. Some breast changes that occur are tingling, pain, or become more sensitive, especially in the nipple area. The nipples also become bigger, more upright and the areola becomes darker. In addition, the formation of glands and the development of milk ducts for milk production. This makes the breast size also becomes larger. These transformations develop together with the increase of the gestational age, as in the third trimester the breasts are getting bigger and sometimes there is even a fluid discharge (Fauziah & Sutejo, 2017; Deswani dkk., 2019).

Breast changes during pregnancy can certainly cause discomfort and sometimes even pain in the breast. Therefore, it is necessary to do breast care. Breast care during pregnancy is very important to increase milk production which will be the sole source of nutrients for babies. Breast care should be done when the gestational age has entered the second trimester, or when the gestational age reaches 5 to 6 months (Fauziah & Sutejo, 2017; Hamilton, 2010).

Breast care during pregnancy is an important thing to do as the preparation for breastfeeding after the baby is born. Breasts need to be prepared since pregnancy so that they can provide and deliver the milk needed by the newborns baby. Breast care also highly contributes to the success of early and exclusive breastfeeding (Deswani dkk., 2019; Hamilton, 2010).

Breast care during pregnancy can provide many benefits. For instance, the breast hygiene will be maintained, especially in the nipple and areola areas which are getting darker during pregnancy, also flexing and strengthening the nipples so that it will be easier for babies in breastfeeding. Breast care also stimulates the mammary glands so that the milk production is well and smooth. Additionally, it can detect early breast abnormalities and also prepare the mother mentally for breastfeeding (Adam et al., 2016; Bobak, 2012).

A research conducted by Adam et al. (2016) showed a significant relationship between breast care during pregnancy and exclusive breastfeeding. Out of 44 women who paid attention to breast care during pregnancy, 30 of them gave exclusive breastfeeding. The same study was done by Al Hadar and Umaternate (2016), and found that there was a significant relationship between breast care during pregnancy and exclusive breastfeeding.

In fact, currently, there are many pregnant women who do not pay attention to breast care during pregnancy. This is caused by their ignorance on how to take care of their breasts. The results or risks that can arise from not doing breast care are shrunken nipples, low milk production or no produced milk, breast infection and various other disorders (Jamaan, 2018). To prevent these, it is necessary to do health education regarding breast care for pregnant women.

Health education can be form a good behaviour, that was caused health education is one of way to gain the knowledge, attitude and skill. The research result by Purnamasari, et. al (2011) about health education by sms center pregnancy to knowledge abaout maternal and child health in Bandung, shown a significant difference (p=0.000) between the knowledge before and after the pregnancy center of SMS. The other, if the people had a knowledge, that make them to compliance to do something. The study by Naim (2017) about effect of family-based education towards pregnant women intension for nutrision optimalize at 1000 first day of life, shown that there was a significant effect between the family-based education towards pregnant women intention to optimize the nutrition of 1000 first days of life (p = 0.00). The results of studies shown that the health education can make the positive behaviour.

Various methods of health education about breast care during pregnancy can be done. Edgar Dale said that providing direct experience during learning is a real practice and making it easier to understand what is being taught. Likewise, if health education about breast care is carried out by demonstration for pregnant women, they

will understand easily and will be able to do it directly. Also, if health education is given using videos, the information about breast care will also be accepted easier and is more effective than using text and images. The reason is that with the videos, people will use both their sense of sight and sense of hearing in receiving the information (Nugraha, 2019).

Research by Wulandari (2017) about the relationship between the level of knowledge of pregnant women and their attitude towards breast care revealed that as many as 47% of respondents had a proficient knowledge and 53% of respondents were lack of knowledge. Regarding the mother's attitude towards breast care, it was found that 58% had negative attitude and 42% had positive attitude. Statistical test results also stated that there was a relationship between knowledge and the mothers' attitude in doing breast care during pregnancy.

The discussions that were previously mentioned clearly explain the importance of breast care that must be done by pregnant women to prepare for the breastfeeding process. However, in fact, there are many pregnant women who have not done so because of their ignorance. To overcome this problem, various methods of health education can be done to increase the knowledge, skills and attitudes of mothers regarding the breast care, including the methods of demonstration and watching videos on how to do breast care. In earlier study researcher didn't found the specific study about demonstration and watching video methods to gain the knowledge, skills and attitudes of pregnant women, but the study more explained about the breast feeding and the other health education for health during pregnancy. So, this study wants to figure out which health education method is the most effective between demonstration or watching video methods to forming behaviour about breast care in pregnant women.

This research is expected to make a positive contribution to pregnant women in the form of knowledge development about breast care so that they can have a healthy pregnancy. In addition, it is also an input for health workers to design effective learning method(s) in providing health education to pregnant women about breast care. Therefore, the aimed this study want to the effective of audio-visual and demonstration method for improving knowledge, attitude, and skills of breast care among pregnant women in Aceh.

Method

This study used a pre-test post-test design with control group. The treatment group received an intervention of health education about breast care by demonstration technique. Meanwhile, health education about breast care for the control group was given through watching videos. Sampling was done by purposive sampling technique with criterions the pregnant women in second or third semester of pregnant at public health center, with a total sample of 73 participants. The sample of the intervention group was 37 participants, and the control group was 36 participants.

The study was conducted in the working area of the public health centre in Aceh. The duration of the research process was 3 months. Pre data collection was done for one day in each group while post data collection was done one week after the health education process had been carried out.

The study was conducted by distributing samples into two groups randomly using paper rolls. The respondents who picked up a paper roll labeled with letter P, they would be included in the treatment group. If their paper roll was labeled with letter K, they should be in the control group. After the distribution of respondents, the study started with the control group by providing them with health education about breast care through watching videos.

Previously, the writer measured the respondents' knowledge, attitudes and skills, then measured them again a week after the health education. In the second week, the treatment was carried out for the intervention group in the form of health education about breast care using demonstration method. The writer also measured the respondents' knowledge, attitudes and skills before treatment and measured it again one week after the treatment. In collecting the data, the writer used a questionnaire about knowledge, attitudes and skills in pregnant women. The

data then being processed and analyzed using the univariate analysis to calculate the frequency distribution and using bivariate analysis for value differences. The pre-and post-test values were tested using paired t test and the differences between the intervention and control groups were checked by using unpaired t test.

Results

Table 1 Distribution Frequency of Demographic Data of Participants (N= 73)

Demographic Data		Frequency (f)	Percentage (%)
Age (years)	Less than 25	26	35.6
	26–35	47	64.4
Qualification	High school	45	61.6
	University	28	38.4
Employment	Employed	30	41.1
	Unemployed	43	58.9
Gestational Age	Trimestes II	33	45.2
	Trimester III	40	54.8
Number of Pregnancy	Primi Gravida	53	72.6
	Multigravida	20	27.4

Table 2 Score Differences between Pre-Test and Post-Test of Knowledge, Attitude and Skill about Breast Care in Intervention Group

Variable		Video Experiment Group		p-Value
		Pre-Test	Post-Test	
Knowledge	Mean + SD	42.7 + 11.2	72.9 + 9.2	0.001
	Range	20–65	55–85	
Attitude	Mean + SD	47.6 + 2.5	58.8 + 6.2	0.001
	Range	44–55	48–75	
Skill	Mean + SD	46.9 + 7.7	73.7 + 7.9	0.001
	Range	33–60	60–86	

Table 3 Score Difference between Pre-Test and Post-Test of Knowledge, Attitude and Skill About Breast Care in Control Group

Variable		Video Experiment Group		p-Value
		Pre-Test	Post-Test	
Knowledge	Mean + SD	59.3+ 17.8	53.4+ 13.7	0.820
	Range	25–80	25–80	
Attitude	Mean + SD	47.6+ 2.5	47.2+ 2.2	0.920
	Range	41–53	40–53	
Skill	Mean + SD	38.6+ 12.0	43.02+ 13.6	0.051
	Range	20–66	13–73	

Table 4 Score Difference of Pre-Test and Post-Test of Knowledge, Attitude and Skill About Breast Care between Intervention Group and Control Group

Variable	Mean+SD	Mean Difference	95% CI		p-value
			Lower	Upper	
Knowledge					
Intervention Group	72.83 + 8.48	-25.33	27.77	38.84	0.001
Control Group	45.43 +12.06	-7.98			
Attitude					
Intervention Group	58.76 +6.20	11.15	3.63	8.79	0.021
Control Group	46.83 + 4.58	4.94			
Skill					
Intervention Group	73.74 + 7.98	26.78	12.19	24.01	0.001
Control Group	56.17+ 10.62	9.55			

The results of this study include demographic data, knowledge, attitudes and skills as presented in Table 1.

Table 1 showed that the majority of the respondents were in the early adult category (26-35 years) at 64.4%, the education qualification was in the high school category at 61.6%, most of the mothers were unemployed at 58.9% and the most gestational ages were in the trimester III at 54.8% with the highest number of pregnancies being primigravida at 72.6%.

Table 2 showed that the score difference of pre-test and post-test of all variables after health education on breast care by demonstration method with p value of <0.05. The post-test score of all variables indicates an increase, particularly in the knowledge variable with the lowest score of 20 in pre-test to 55 in post-test, and the highest score of 65 to 85. It is the same for the skill variable where the lowest score of 33 increases to 60 and the highest score of 60 to 86.

Table 3 showed that the score no difference of pre-test and post-test of all variables after health education on breast care by video watching method with p value of >0.05. The mean post-test score of the knowledge variable the same between pre and post-test were 80, and the lowest score stays at 25. That it's same with the attitude variable. But for the skill variable mean post-test arise that pre-test, but not significantly the was 13 score differences.

Table 4 revealed that there is a difference in result of knowledge, attitude and skill between intervention group and control group (p <0.05). Out of the three variables, the biggest result is in the knowledge variable with mean difference = 26.78.

Discussion

The research result shows that there was a score difference between the pre-test and the post-test in knowledge, attitude and skill variables after health education on breast care, for both intervention group and control group. Likewise, there was a score difference in knowledge, attitude and skill between intervention group and control group, with p value of <0.05. It is an indication that health education on breast care effectively enhances the knowledge, attitude and skill of pregnant women on breast care.

The study about the impact of perinatal education on behaviour change toward breast feeding and smoking cessation in a healthy start population by Caine et al. (2012), shown that women with advanced education were more likely to have quit smoking, as were women who were breast feeding at hospital discharge. After controlling for education, IHS clients tended to be less likely to continue to smoke during the third trimester (OR, 0.76, 95% CI, 0.49–1.16), as were those with a first pregnancy (OR, 0.32; 95% CI, 0.10, 0.98) and no other smokers in the home (OR, 0.25; 95% CI, 0.08, 0.74). Breast feeding and smoking cessation are modifiable risk factors that were impacted by behavioral interventions through case management education.

Health education during pregnancy should be effective to gain of quality of pregnancy. That due the health education can be increase of knowledge, affective and psychomotor to prepare pregnant women for childbirth and post-partum period (Herval et al., 2019). Yikar and Nazik (2019) conducted the study about effects of prenatal education on complaints during pregnancy and on quality of life shown that providing prenatal education reduces complaints and increases quality of life of pregnant women.

However, it is crucial to understand that there are multiple contexts, and pregnant women represent multiple demographic groups. The strategies of health education must be specifically designed to provide the desired outcomes for different target groups (Herval et al., 2019). A positive pregnancy experience, ante natal care guidelines and services should be designed to deliver it, and those providing ANC services should be aware of it at each encounter with pregnant women (Downe et al., 2015).

The principles of ante natal care for pregnant women to provide advice, education, reassurance, and support. That to address and treat the minor problems of pregnancy and to provide effective screening during the pregnancy. There were many studies done which found that educated women have better pregnancy outcomes compared with uneducated women and that education during the antenatal period can reduce pregnancy and delivery complications (Al Ateeq & Al Rusaiess, 2015). Health education during pregnancy to make positive behaviour and must be designed suitable with women pregnant. In several situation transfer of information with psychomotor skill like demonstration or watching the video about health care during pregnancy are the choices.

Learning through demonstration gives a first-hand experience for the group members. In this method, the tutor would demonstrate a certain action, and then the learners were given time to re-demonstrate what they had been thought. This kind of learning process will provide deep understanding, because the learners were directly involved in the learning process. Learners will experience and be involved in the things they are learning, and the learning process happens in real situation (Nugraha, 2019).

Demonstration method makes the learning process more certain and concrete, so the learners can easily learn the things that they are taught. Moreover, the learning process is more interesting, and the learners are encouraged to be active in correlating between the theory and practice (Nursalam & Effendi, 2007).

Furthermore, Millis (2002) explained that to gain optimum skill, the learning process must be done by the sequences: setting the goals by doing, analyzing skills in detail and in order, demonstrate the skills, elaborate and focus on key competencies, give opportunity to learners to try to practice under monitoring and guidance, and then giving assessment towards the effort of the learners. In the health education on breast care using demonstration method, these steps were executed. The process was commenced by setting and explaining the objective of the learning and demonstrating steps for breast care. After that, the participants retry the process taught under guidance of the tutor and the tutor then assessed what had been practiced by the participants (Bouner, 2007).

The audio visual learning method by watching video is also one of the most suggested learning methods. This is because the object or the teaching materials shown on a video is more realistic and original. This condition also gives more concrete experience to learners. Video learning method requires the learners to actively use their visual and auditory senses (Bouner, 2007; Bravo et al., 2011).

Video is a media learning that can be used to deliver messages, stimulate the minds, feelings, attention and the will of learners to keep learning. Anderson (1987 in Siwi, 2012) stated that video media can develop cognitive ability because of the stimulation of moves and sensations. Video also exhibits how to react to and do something. It can also affect behaviour and emotion, so learners can be more involved in the learning. Video is suitable media learning for skills involving moves (Akhtar & Akbar, 2011).

The research result of Bravo et al. (2011), about video as a new learning tool to boost university students' motivations showed that the use of video carried a positive effect

towards the improvement of their learning motivations. The content and the amount of information delivered from the video need to be considered order to increase the effectiveness. From the tutors' interviews it was discovered that video gave faster explanation compared to verbal or written explanations.

Referring to the above explanation, the two learning techniques, both by demonstration or watching video had significance towards the improvement of knowledge, attitude and skill on breast care during pregnancy. This is in line with the research by Devi et al. (2019) on the results comparison of the effectiveness of learning the obstetric palpation skill by watching video and traditional demonstration among nursing students. The result revealed significant difference of the students' skill score in the pre-test and the post-test after the learning program by video watching and traditional demonstration ($t = 18.35$, $p < 0.001$). Although the two methods were both effective in improving the skill learnt, the traditional demonstration had higher score compared to video watching score at the post-test ($t = 36.40$, $p = 0.001$). This is similar to the research by Pradan et al. (2018) on the effectiveness of learning by demonstration and watching video towards the knowledge and skills of the students of nursing in India. The result showed that both learning methods were significant in improving the score of knowledge and skill. However, the learning method by watching video was more effective than by demonstration.

Conclusion

The research results indicated that there was a crucial difference or a significant increase in the scores of knowledge, attitude and skill before and after health education on breast care during pregnancy, both by means of demonstration and video watching. Nevertheless, the scores of knowledge, attitude and skill were higher after health education on breast care by demonstration method.

The research results shown that the demonstration method better than audio visual method to learn about skill.

It is suggested to health workers to practice on doing health education which gives firsthand experience to target learners, thus the content of the health education felt real and can be practiced directly. Demonstration method is better way to teach pregnant women about breast care. Re-demonstration of breast care needs to be conducted so learners can directly practice abaout breast care which will give an excellent learning experience. A follow-up research with more homogenous samples and a larger number of respondents needs to be conducted.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Nurses' Reflections on Challenges and Barriers of Communication in The Intensive Care Unit: A Phenomenology Study

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Submitted: 19-05-2019 Accepted: 09-04-2020 Published: 12-04-2020

Abstract

Communication among nurses, patients, and families takes an important role in the intensive care unit in which the patients are in critical condition and unable to involve in two-way communication. Research related to effective nurse-patient communication has been done extensively, but the information regarding communication in intensive care unit is still limited. This research aimed to explore nurses' experiences in the intensive care units in effective communication to patients/patient's families. This was a qualitative study project with phenomenology approach. The data were collected using the in-depth interview technique approximately 60 minutes involving ten nurses who were selected using the purposive sampling at Al Islam Hospital Bandung. Data were analysed using the Colaizzi method and the results were presented in themes. Based on the nurses' experiences, four themes were emerged in this study including (1) Nurses' dilemma of their professionalism and personal issues/matters, (2) Contextual factor affects selection of nurses' communication technique, (3) Barriers in effective communication; difficulties in accompanying families to accept critical patient conditions, care and treatment procedures in the ICU which were complicated, and misunderstanding between nurse-patient and family (4) Compassion and patience are required in nurse-patient communication in ICU. The complex patient/family conditions in the ICU require nurses to choose the appropriate communication technique accompanied by a sense of compassion and patience. Nurses need to improve their ability to communicate effectively in order to lower the barriers in communicating between nurses-patients/families. Recommendations, training and assistance of effective communication become important for nurses in improving services in the Intensive Care Unit.

Keywords: Effective communication, family-patient, ICU, nurse experience.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

Communication plays a role in the patients' healing, related to the collaboration of nurses and other health workers, and also affects patient and family satisfaction (Suryani, 2014). Thus, good communication is necessary for every service available in the Hospital. Specifically, nurses with good ability and skills in communication will easily establish positive relationships with patients and their families (Liljeroos, Snellman, & Ekstedt, 2011) especially nurses who work in intensive care unit (ICU) one of the services available in the hospital in which a special service for patients with critical condition. This particular skill is important and should be continuously improved by any nurses, so it would become a habit in their duty to provide health services in the hospital.

ICU is a specialized care unit that manages a treatment for seriously ill and critical patients and injuries with life-threatening or potentially life-threatening complications; involves trained health personnel; and is supported with completely specialized equipment intended for patient observation, treatment and therapy (Ministry of Health, 2010). Unstable patient condition in ICU and their generally lower state of consciousness makes the patients' family as one of important decision makers related to nursing interventions. Under such conditions, effective communication between nurses and patients/families is required.

The research of therapeutic communication; processes, strategies, challenges between health workers and patients along with their families have been widely done. For example the research of Liestriana, Rejeki, and Wuryanto (2012) which aimed to identify the relationship of therapeutic communication with postoperative patient satisfaction in RSUD Kajen Pekalongan District. The research method used a descriptive correlative and the cross-sectional approach with 32 nurses as samples. The data were collected by using questionnaire with a correlation test. The study found that there was a significant correlation between therapeutic communication and postoperative patients' satisfaction in RSUD Kajen Pekalongan District. The result of this research was supported by the research of Bolla (2013) that aimed to see the nurse's therapeutic communication relationship with patients' satisfaction level in the Melati inpatient room of RSUD Subang with 16 nurses and 16 patients as samples. The research method of the study was qualitative descriptive. Data collection included questionnaires and observations. The study found that there was a relationship between nurse therapeutic communication and the patients' satisfaction level. The study conducted in ICU by Azoulay et al. (2000) aimed at identifying factors related to the family understanding level of the condition of the patients treated in the ICU. The sample size was 102 patients with 76 families of patients who visited or accompanied the patient during treatment. There was a lack of understanding of the patient's family about the patients' condition because the doctor's communication time was less than 10 minutes. There was also a lack of information given in brochures or leaflets. It caused the family to misunderstand the patients' condition.

A nurse is the core of communication and plays an important role in facilitating professional communication because a nurse is a bridge between patient and family with other health professionals including in Intensive Care Unit (Ghiyasvandian, Zakerimoghadam, & Peyravi, 2015). In the communication process, especially in the room of patients with the critical condition, nurses, patients, and families may experience many challenges such as the determination of patient care decisions must be immediate, complicated procedures for life saving and life threatening. Research related to effective communication and therapeutic between nurses and patients have been done quite extensively, but research information that explores nurse experience when communicating with patient and family in ICU was still limited. One of them is due to the limited number access of families allowed to enter the treatment room in addition to the condition of the patient in an unconscious condition. This study aimed to explore nurses' experiences in the intensive care units in effective communication to patients/ patient's families.

Method

This study was a qualitative research project using a phenomenology approach. Phenomenology is a research method that aims to reveal live experiences about a phenomenon (Suryani, Welch, & Cox, 2013). This study particularly explored nurses' experiences in communicating with patients and their families in the Intensive Care Unit. Ethics approval was obtained from the Human Ethics Committee of Universitas Padjadjaran, and the site permission letter was approved by Al Islam Hospital, Bandung number 3059/RSAI/DIK/VI/2016.

Setting and Participants

The study was conducted in the Intensive Care Unit, Al Islam Hospital Bandung. The participants were ten nurses consisting of five men and five women selected by a purposive sampling technique. The inclusion criteria include nurses who have worked for more than 3 years, holds nursing education at least Diploma 3 and ICU training certificates. Participants were selected with the assistance of the head nurse (the manager of the nursing unit at each ward) using the nurse's database as a consideration of conformity with the inclusion criteria. Participation itself was voluntary.

Data Collection and Analysis

Data collection was done by in-depth interview. An interview is an effective method to explore human's behaviour including experience (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). Data collection and data analysis on phenomenology research approach put the researcher as the main instrument which functions to plan, perform data collection, analyse, determine the results, and make the report (Polit & Beck, 2014). In this study, interview to 10 participants was conducted by the lead researchers who had experienced interviewing in the qualitative study and had clinical experiences in critical care unit area including intensive care unit for 16 years. The interview was conducted in 60-90 minutes with each participant, recorded using a digital voice recorder and transcribed in Bahasa Indonesia. The stages of the interview included: developing trusts with participants and exploring nurse's experience in communicating with patients and families. The researcher paid attention to the principles of social skills including friendly, empathy, polite, and showing open attitude in data interpretation and reporting research results.

Data analysis was undergone by using Colaizzi 1978 method (Wojnar & Swanson, 2007). Stages of data analysis included first understanding the content of each transcript by listening to the recording and reading transcripts at least 5-8 times depending on the researcher's understanding. The second stage was marking the participants' important expression related to nurse's communication with patients and families and separating the transcribe into a distinct file (file 1). The third stage was formulating unit meaning reading file 1 then grouping the same ideas (file 2). The fourth stage was reading file 2 and clustering it in the same themes, and they were put together into the major theme. The fifth stage was integrating all results into a very complete explanation of the theme. At this stage, the researcher narrated the major theme supported by data from the team cluster, files 1 and 2 and discussed themes with the research team. The sixth stage involves explaining the basic structure of the discovered phenomenon, using the full description of the fifth stage. In this stage the researchers identified the basic structure of phenomena related to communication between nurses with patients and families in intensive care unit. The seventh stage, validating the results of the analysis by returning to the participants to explain the results of the sixth stage to ensure that it was in accordance with the nurse's experience when communicating with patients and families. Based on the analysis, four major themes obtained are described in the results.

Trustworthiness of this study

This qualitative research was carried out by taking into account the reliability of data by using data validity including credibility, dependability, confirmability, and authenticity (Polit & Beck, 2014). Credibility means that the researcher verified back to the informant to ensure the accuracy of the data in the interview. Transferability in

qualitative research was un-generalized so that the researcher wrote in a clear, detailed, systematic and reliable way, by writing citations and comments. For dependability did by conducting data inquiry where done rare verification of research started from the raw data, data reduction results, and record of the research process. For external reviewers' feedback are conducted by consultation with qualitative phenomenology research experts. Confirmability was done by recording and taking note of the raw data systematically including field notes. The implementation of this qualitative research was using ethical principles of research.

Results

Characteristics of participants

All participants in the study have the same education background, which is Diploma III, with the average working period in ICU for 5 years with the maximum working period of 8 years and the minimum of 3 years. All participants have participated in various training related to life-saving and critical care.

Themes

Four main themes emerged from the analysis include (1) Nurses' dilemma of their professionalism and personal issues/matters, (2) Contextual factor affects selection of nurses' communication technique, (3) Barriers in effective communication: difficulties in accompanying families to accept critical patient conditions, care and treatment procedures in the ICU which were complicated, and misunderstanding between nurse-patient and family, (4) Compassion and patience are required in nurse-patient communication in ICU.

Theme 1: Nurses' dilemma of their professionalism and personal issues/ matters

Nurses are aware that they must communicate effectively with patients and families, but as individuals sometimes they have personal issues such as problems with children or husbands at home. They are aware that the problem might affect the way they communicate with patients. "… I ever forgot to smile… moreover, when I felt very tired and there were personal problems with family at home, I tried to keep smiling… though maybe my smile was different yea…" (P2). A similar opinion was expressed by another participant, who said "… also when I was sick of the jobs, there were a lot of patients in bad conditions, many problems at home… so, I was unable to communicate well, I could not focus," (P3).

As individuals, nurses also have problems at home, especially with families that may affect the nurses' emotional stability while working. On the other hand, the physical conditions of patients including fatigue and psychological of under pressure due to the situation of care services in the ICU both directly and indirectly affected their performance in communicating with patients and patient's families. They tried to put aside their feelings, fatigue, and emotion due to personal problems so that despite the problem, they can still perform well (smiling, being friendly, and answering questions).

Theme 2. Contextual factor affects selection of nurses' communication technique

The condition of unconscious patients in the ICU causes their families to decide what medical and nursing interventions that patients will have. The situation makes the nurses in the ICU constantly communicate with the family. The nurses have to choose appropriate communication techniques based on the characteristics of the family such as talking slowly, using simple-repetitive language. A nurse said that "..... when communicating with the elderly, they should talk very slowly" (P4). While communicating with families with lower-secondary education, nurses used different communication approach.

"Families didn't understand the type of tools in the ICU, what the examination was done for, and if the results had been out they were also confused with the results. Although we explained in simple language, not using the medical term, it was not easy for them to understand. Most of them were from the village and only elementary and secondary school graduates" (P4).

Other nurses also expressed about communicating the interventions related

to services in the ICU simply for middle-educated families disclosud by 7 out 10 informants (P1, P2, P3, P5, P6, P7, P10).

In short, the age and education factors of the patient's families in the ICU affect the way nurses use communication techniques with them. The nurse chose to communicate slowly to the elderly patient's family. When communicating with families with low education level, nurses used a simple language and they had to repeat the information.

Theme 3: Barriers in effective communication

Nurses face various barriers when communicating with the patient's family. Constraints expressed by nurses include difficulties in accompanying families to accept critical patient conditions, care and treatment procedures in the ICU which were complicated, and misunderstanding between nurse-patient and family.

The hemodynamic conditions of patients in the ICU tend to be unstable and very fluctuating, which means that the patient's condition may suddenly improve or may even deteriorate which can cause organ failures, or even death. This situation can take place quickly and cause shock to the patient's family.

"When the patient's condition deteriorated and we informed to the family, they sometimes became hysterical and even fainted. If it happened, we waited for the family to be calm. Since it would be useless to communicate in such situation, they wouldn't accept what we say and sometimes they got back in anger" (P6).

Other nurses also expressed similar experiences "yes, it would be difficult to communicate with the families who were still less able to accept or in denial state" (P9). All nurses expressed the same opinion about the difficulty of families' acceptance of the patients' condition.

Further obstacles were related to the complexity of service and care in the ICU which family of patients usually face such as the tight hours of patients visit, and loads of medical and nursing interventions that had an impact on the number of complaints received by nurses from the family.

"… It's often… ICU is relatively closed, our patient visit time is restricted which is often complained and that the rule is, the family may enter during the visiting hour only or in certain conditions such as criticalness. And that's our culture, the only one ill person but all villages want to visit" (P2).

Opinions about family complaints were also related to ICU services "there are so many complaints, especially at the time of the emergency, why they (family) were not involved from the beginning" (P6). Nurses often received various service-related complaints from patient's families. Therefore they found it difficult to establish communication with the families.

Misconceptions often coloured the communication between the nurse and the patient/family. This was probably because Bandung is the capital of West Java Province with a high level of urbanization, diverse cultures, and the status of Al Islam Hospital as the first referral hospital of Puskesmas (Public Health Center) in various areas of West Java. This diversity impacts the way family and nurses communicate. "… Ah, I am from Batak, I talk with a loud voice, while the patients' families are Sundanese, So they might consider me angry when I speak to them with a loud voice (P4).

The opposite condition was expressed by the nurse (P7) "... I feel like often shouted by the patients, so sometimes I keep the distance from the family". The difference of communication styles sometimes became a hurdle in family-nurse communication.

Theme 4: Compassion and patience are required in nurse-patient communication

Patient's critical conditions such as unconscious, weak and totally dependent state on the health worker raised the nurses' compassion to the patients and their families. When performing interventions such as bathing, changing position and suctioning the nurses empathized the patient's condition. Thus, when the patients are unable to communicate verbally, the nurses may communicate non-verbally to the patient by showing compassion and patience while performing the treatment. "… so, yea… sometimes the patient looked tortured and in pain while suctioning, but they could not talk, I felt sorry, so tried to take action carefully,

fast and effective" (P5).

Nurses also expressed their compassion when they handle personal hygiene needs of the patients. "… While bathing an unconscious patient, I washed their bodies as if I helped to cleanse my own mother's, so I did it with affection and patience" (P1). The condition of a fully dependent patient requires the nurse to be careful and full of patience to carrying out actions.

Discussion

The first theme in this study: The dilemma between nurse professionalism and inconvenience in nurse-patient/family communication is in accordance with the research findings of Fakhsianoor and Dewi (Fakhsinoor & Dewi, 2014) which stated that the unpleasant circumstances experienced by the nurses can cause stress that leads to the occurrence of burnout at work. The discomfort experienced by the nurses will have an impact on the services provided considering the nurse as the frontline of health services. Nonverbal communication such as smiling, physical contact and facial expression is very important in creating effective communication between nurses and patients and families especially in ICU (Xu, Staples, & Shen, 2012). Informants experienced other psychological and physical conflicts such as perceived fatigue and personal problems encountered impacted on their appearance as rarely smiling when conveying information to the patient's family. Loghmani, Borhani, and Abbaszadeh (2014) mentioned that personal problems occurred can interfere with the interaction between the nurse and the patient's family. In addition to the shortage of staff coupled with high workloads caused nurses did not have enough time for the patient's family so that there was a negative interaction between nurses and family (Loghmani et al., 2014).

Ideally intensive care unit has a 1:1 ratio where one nurse takes care of one patient. However, the reality revealed that sometimes they handled two patients in one shift so that it made them exhausted. The discrepancy between the number of nurses and patients required the nurse to adapt to the situation. The adaptation was more focused on visible physical needs indicator which can lead to deterioration of the patient or the worst. It could cause death, the nurse forgot to communicate with the patient's family. Recast the estimation of the nurse-patient ratio that should be in the ICU. In addition, pay attention to the balance between the workload and the rest time for the nurses become important to improve the services in the ICU, especially the quality of communication between the nurse with the patient and family.

Contextual factors influenced the selection of nurse communication techniques. The results of this study also showed that in the effective communication between nurses and patients' family, it was important to pay attention to factors such as age, educational background, and economic status. All three of these can affect the pattern and techniques of nurse-family communication. Age factor becomes a challenge in communicating also found in research conducted by Callinan and Brandt (2015). They mentioned that the nurse barrier in communicating with the elderly due to cognitive impairment. The impairment requires nurses to choose communication techniques that are appropriate to the conditions such as using simple language and talking slowly. In addition, the patient's family education background influences their understanding of the information provided by the nurse. It was as described in research by Suryani (Suryani, 2014) that the higher a person's education is, the easier it is for him or her to receive information provided by health workers and vice versa. For ICU where the family has an important role in the patient's service process, conducting the assessment in particular medical history and social support should not only focus on the patient but the assessment is also performed on the patient's companion. Thus, the nurses should know the patient's background clearly so that they can determine communication methods that suits the patient's companion characteristics, including the family.

Various barriers to effective communication were identified in this study. The nurse's communication skills have been a great concern but often overlooked. Communication is not only carried out to patients but also to families related to

the condition of family members who are critically ill. Nearly 100% of families stated that communication with nurses is important to them, especially if associated with agreement on procedures and interventions provided to patients (Redley, LeVasseur, Peters, & Bethune, 2003). It may need to delve the solution to minimize the barriers.

Patients/families frequently complain to nurses. Nurses are required to always be professional on duty. This is demonstrated in any situation and condition including when encountering both patient and family complaints. Frequent visit of patient's relatives during the visit resulted in a negative interaction between the nurse and the patient's family member (Loghmani et al., 2014). On the other hand, difficulty in assisting the family to accept the condition of family members who are critically ill. Delivering information to the patient's family was increasingly difficult especially when the nurse has to deal with a denial patient's family. In accordance with research that conducted by Griffiths (Monden, Gentry, & Cox, 2016) stated that it is not easy to deliver bad news to patients or families. Moreover, sometimes they enter a phase where they cannot accept the situation. It needs nurse's social skills and ability to control the emotions of others. Someone who has social skills is able to control the emotions well when dealing with others, carefully figure out the situation, and interact smoothly, besides these skills can influence and lead, deliberate and finish the slaughter and it is required in teamwork, in this case, nurse-patient and their families.

The nurse has difficulty communicating with someone who has a different cultural and linguistic background. Research conducted by Savio and George (Naveen & Anice, 2013) mentioned that nurses have difficulty talking to someone who has a distinct cultural and linguistic background. Another study conducted by Chittem and Butow (2015) stated that the language differences could lead to misunderstanding in interpreting the information provided. Therefore, in the nurse-family relationship mutual respect is needed to be able to minimize misunderstanding due to differences in cultural culture and language. Nurses also may need to improve clinical performance, knowledge skills, and communication skills that are easily understood by patients and their families.

Compassion and patience are required in nurse-patient communication. . Patients treated in intensive care feel hopeless, helpless, hopeless, feeling of wanting to give up, uncertainty about the future and feel on the verge of death (Bastian, Suryani, and Emaliyawati (2016); Emaliyawati, Sutini, Ibrahim, Trisyani, and Prawesti (2017) this creates its own anxiety for patients and can affect hemodynamic status, hypermetabolism that occurs in critically ill patients, and can reduce oxygen supply and perfusion to tissues(Shari, Suryani, & Emaliyawati, 2014). Compassion is needed to provide support to patients in critical condition. The results of this study indicated that communication between nurses with patients' families in ICU requires patience due to the unfavourable condition of the patients. Nurses' jobs are not easy because the nurses have to control anger and patience (Loghmani et al., 2014). According to Pandanwangi (Pandanwangi, 2009), individuals with high emotional intelligence are individuals who are able to master emotional turmoil, manage stress and have good mental health, thus this individual will be able to establish good relationships with others. According to Rexhepi and Berisha (Rexhepi & Berisha, 2017), someone with good emotional intelligence will live his/her days and work with optimism, stay motivated, calm, focus, self-control, care and respect the environment. Nurses in the ICU must have a high caring attitude because this attitude is the condition for giving care. According to Suryani (Suryani, 2014), nurse's knowledge about behavioural science is the substance to perform care, and nurse's ability to provide physical and psychological needs is the tool. The nurses should have the high self-awareness to bear patience and loving nature.

Conclusion

The four themes found in this study (1) Nurses' dilemma of their professionalism and personal issues/matters, (2) Contextual factor affects selection of nurses' communication technique, (3) Barriers in effective communication;

difficulties in accompanying families to accept critical patient conditions, care and treatment procedures in the ICU which were complicated, and misunderstanding between nurse-patient and family (4) Compassion and patience are required in nurse-patient communication in ICU. The themes were new insights in the research related to nursing and patient communication in ICU. The themes are also important as knowledge of the nurses and family communication, especially health services in Indonesia which might be different from other countries. It is important for nurses to improve their clinical performance, knowledge, and effective communication skills to enhance the verbal communication effectiveness, as well as non-verbal communication between nurses and patients. Training and assistance in effective communication in the intensive care unit can be the way to improve nurses' communication skills.

Conflict of interest

No conflict of interest in this study

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Relationship between Healthcare Provider's Perception about Patient Safety and Patient Safety Implementation in The Emergency Department

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Submitted: 28-08-2018 Accepted: 16-04-2020 Published: 22-04-2020

Abstract

The Emergency Department (ED) is a hospital service unit that provides the first service for patients with disease conditions that threaten their lives or can cause disability for 24 hours. Implementation of patient safety in the ED should be applied to minimize the risk of error handling for the patient. ED staff perceptions related to the implementation of patient safety is a factor that directly-related to his behavior in applying the implementation of patient safety. This study aimed to analyze the relationship between perceptions of staff ED and patient safety by implementing patient safety at the Regional Hospital Emergency Department Cirebon. This study was a correlational study with the cross-sectional approach of 99 emergency staff with total sampling at Cirebon. Collecting data used questionnaires of patient safety. Based on the results of the univariate analysis showed that the majority (80%) of respondents either category on the implementation of the sub-variables of patient safety team collaboration and communication, only a small proportion of respondents less category (20%) on the implementation of the sub-variables of patient safety team collaboration and communication. In addition, less than half (49.5%) category lacking in implementing patient safety, only half (50.5%) categories, both in the implementation of patient safety. Based on the results of the bivariate analysis showed that the relationship implementation of patient safety with all the variables, namely teamwork (p-value = 0.000), communications (p-value = 0.005), the concept of patient safety (p-value = 0.005), and perception (p-value = 0.005). Based on the results of the study, the researchers concluded that the relationship between staff perceptions of the emergency department (ED) on patient safety by implementing patient safety at the Regional Hospital emergency department (RSD) Cirebon. IGD support staff perceptions of patient safety, but still found lacking in the category of health workers implementation of patient safety, so the need for patient safety education and training with simulation methods to illustrate the approach in the implementation of patient safety.

Keywords: Emergency staff, perception, the implementation of patient safety.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

The Emergency Department (ED) is a hospital service providing services during the first 24 hours in patients with the threat of death and disability, Services provided interdisciplinary involving all health professions include doctors, nurses, energy analysts, and pharmacy staff. The medical profession in their service delivery to address the interdependence of health in order to improve health care for patients (Ministry of Health, 2011). Type of patients who need examination and immediate action especially in critical condition, both in acute cases of non-trauma, acute cases of trauma, patients with psychiatric disorders, patients with infectious diseases, and the patients were exposed to chemical or biological (Australian College for Emergency Medicine, 2014).

Pratama health services that have ED facilities and referral health services should have facilities and infrastructure that are equipped with emergency equipment. In addition, all ED staff should have sufficient competence and capability for handling emergency cases. Handling victims who are not immediately carried out can cause various problems such as increased risk of disability, complications and even the risk of death (Emaliyawati, Prawesti, Yosep, & Ibrahim, 2016). Patients are in an emergency condition and must be given immediate action at least will cause anxiety for both the patient or the health care staff themselves, especially nurses who handle (Shari, Suryani, & Emaliyawati, 2014).

Service to the emergency conditions often faced with an increasing number of patients and severity levels. Patients seeking treatment for primary and urgent complaints, any time day or night, so that frequent emergency conditions met by patients with various conditions and levels of severity. It is certainly need high skills of health personnel in the decision to prioritize services according to the level of severity. Conditions incoming emergency patients with a number of unexpected and different severity became one of the factors that make health workers are overwhelmed in dealing with patients. Therefore, it will be an imbalance that can have an impact on safety patient threat (Brenna, 2016).

Sherman et al. (2009) states that human and organizational factors are factors that contribute to patient safety, it affects the behavior of health staff in relation to safe patient care. Referring to the concept of patient safety, although the program of patient safety has been socialized in clinical areas, but problems in the field has found the tendency of various conditions such as crowding, lack of staff, the waiting time extends, the lack of major appliance, resulting in patient services that are safety becomes less than the maximum (Agency for Healthcare Research and Quality, 2013).

Complex services in the emergency department is closely related to various risk factors for patient safety that could potentially cause injury and harm to patients such as patient handling errors (Runciman et al., 2009). As the results of research Horwitz et al. (2009), about a common problem in the ED tends to lead to the risk of patient safety that include communication failures, lack of teamwork, and crowding. Other studies on patient safety in the emergency room mention that interruptions and multitasking are considered factors contributing to errors (Westbrook, 2014). Based on the description above, shows that the communication failure factors, lack of teamwork, crowding, interruptions, and multitasking is a factor that is very influential on patient safety in the emergency department.

Integral skills in managing multiple tasks at the same time required in the emergency room. According to the results of research Patel and Cohen (2008) that the work of doctors and nurses in the emergency room that is unique clinical environment tends to occurrence of multitasking. Activities most often performed by doctors and nurses while doing multitasking namely the exchange of information (Lena et al., 2012), Although the effect on the creation of a working memory load is higher (Guttmann et al., 2011). Two studies in Denmark is based on questionnaires to doctors and ED nurse's, that multitasking often as stress factors that can interfere with the performance. This has the effect of errors caused by the high cognitive demands on services multitasking (Sorra et al., 2009).

Implementation of patient safety is activity

intended reducing the possibility of side effects associated with health care (Shojania et al., 2001), The complexity inherent in the emergency services such as employment in the same time, uncertainty, change of plans, and a high workload. Interactive complexity in the emergency services often cause unfavorable attitude among staff in dealing with patients, so that errors often result from the behavior of health care in this unit (Peters & Peters, 2008). Behavior in health services cover all activities or activities of individuals both observable and unobservable relating to the maintenance and improvement of health influenced the perception of the individual (Sobur, 2011). For creating the perception that support the realization of the health service needs to be supported by the competence of health professional's patient safety (Jeffs et al., 2013). Consistent research Bovbjerg, Miller, and Shapiro (2001), which states that the services provided appropriate professional responsibility and discipline will affect the increase in perception and execution patient safety,

Perception is an individual view of something that will make a response and behave (Walgito, 2002). The theory states that the health belief model of individual plays a role in determining the attitude of doing or not doing health behavior (Conner, 2005). Appropriate research Rosenstoch (1974) in theory health belief model of states that individual behavior is influenced by individual perceptions about the threat of health problems and the corresponding value of actions aimed at reducing the threat. Perceptions of health workers leading to actions that affect patient safety, which is important for the hospital. Health workers are important resources for the hospital or health care provider to ensure patient safety (Aiken et al., 2002; Berney & Needleman, 2006). Given the important position in the provision of health services, it is necessary to understand the perception of health professionals on patient safety (Affonso et al., 2003). This study aimed to analyze the relationship between staff perceptions of the emergency department (ED) on patient safety by implementing patient safety at the Regional Hospital emergency department (RSD) Cirebon.

Method

This research is a quantitative research using analytic descriptive study with cross sectional study design. The study was conducted from June to July 2018 at ED (RSD) Cirebon, West Java. The non-probability sampling technique was used with a total of ninety-nine (n=99) participants.

This study used three questionnaires namely demographic questionnaire, a questionnaire of perception, observation and questionnaires related to the implementation of patient safety healthcare provider's in the ED. Demograph questionnaire containing age, sex, length of employment, job position. Researchers used questionnaire adopted from Hospital Survey on Patient Safety Culture developed by The Agency for Healthcare Research and Quality (AHRQ) (2007) and observation using a questionnaire emergency assessment team measure (TEAM) according to the guidelines Cooper et al. (2010). Researchers conducted a back translation and the validity and reliability of the questionnaire on the ED staff of 40 people using the Pearson product moment correlation for validity and KR-20 and Cronbach's alpha reliability. All items on the questionnaire perception and implementation of patient safety are valid. The questionnaire is said to reliability because reliability coefficient greater than 0.7. Univariate analysis was used to determine the frequency of each variable. Analysis using a bivariate test with Kendal's Tau b test. Before collecting the data has been carried out ethical clearance from Universitas Padjadjaran Research Ethics Committee on May, 2018 No. 472 / UN6.KEP / EC / 2018.

Results

Research results in Table 1 showed that more than half (57.58%) of respondents are male, most aged 26–30 years are at intervals of as many as 46.46%, the highest education level is Diploma (13 nurses, midwives 8, pharmaceuticals 6, the analyst 21), amounting to 48.48%, the highest working period at intervals of 1–3 years is 35.35% of respondents, while the average patient visit pebulan mostly in yellow triage is 69.91%.

Table 1 Frequency Distribution Characteristics of Respondents and Number of Visits Patients at ED (RSD) Cirebon (n = 99)

Variables	Category	F	%
Age	18–25 yr	12	12.12
	26–30 yr	46	46.46
	31–40 yr	25	25.25
	41–50 yr	16	16.16
Gender	Man	57	57.58
	Woman	42	42.42
Years of Service	6 mon–1 yr	2	2.02
	1–3 yr	35	35.35
	3–5 yr	27	27.27
	5–10 yr	16	16.16
	> 10 yr	19	26.26
Profession	Doctor	26	26.26
	Nurse	32	32.32
	Midwife	11	11.11
	Pharmacy Personnel	9	9.09
	Power Analyst	21	21.21
Education	D3	48	48.48
	D4	8	8.08
	S1 Nurses	15	15.15
	S1 Doctor	26	26.26
	S1 Pharmacists	1	1.01
	Masters in Nursing	1	1.01
Average number of patient visits per month period from January to June 2018	Triage		
	Red	335	11.88
	Yellow	1970	69.91
	Green	513	18.20

Table 2 Distribution of Variable Frequency Category Item Implementing Patient Safety Sub (n = 99)

Variables			
Implementation of Patient Safety	**Category**	**F**	**%**
Sub variable teamwork			
Ask for help from the team needed	Good	99	100
	Less	0	0
Verbally asking for input team	Good	66	66.7
	Less	33	33.3
Receive Assertion and ideas	Good	94	94.9
	Less	5	5.1
Teams communicate effectively	Good	93	93.9

	Less	6	6.1
Teams work together to complete the task	Good	88	88.9
	Less	11	11.1
Tim act calmly and controlled	Good	92	92.9
	Less	7	7.1
Positive team morale	Good	88	88.9
	Less	11	11.1
Tim adapt to changing situations	Good	57	57.6
	Less	42	42.4
Monitor and review the situation	Good	58	58.6
	Less	41	41.4
The team anticipates the possibility of action	Good	56	56.6
	Less	43	43.4
Sub communication variables			
The emergency department staff to communicate openly	Good	96	97
	Less	3	3
Specific structured communication (SBAR)	Good	86	86.9
	Less	13	13.1
Declare perception, action plan	Good	62	62.6
	Less	37	37.4
When communicating introduce myself	Good	57	57.6
	Less	42	42.4
Communication and respond to patients	Good	99	100
	Less	0	0
Komunikasi calm voice tone	Good	99	100
	Less	0	0

Table 3 Distribution of Implementing Patient Safety (n = 99)

Variables	Category	F	%
Implementation of patient safety	Good	50	50.5
	Less	49	49.5

Table 4 Analysis of Perception Staff Relations IGD About Patient Safety and Implementation Patient Safety

Variable / Sub Variables		Implementation				R	P Value
		Good		Not Good			
		f	%	f	%		
Teamwork	Support	37	67.3	18	32.7	0.375	0.000
	Does not support	13	29.5	31	70.5		
Communication	Support	35	62.5	21	37.5	0.274	0.005
	Does not support	15	34.9	28	65.1		

Patient safety concept	Support	33	63.5	19	36.5	0.273	0.005
	Does not support	17	36.2	30	63.8		
Perception	Support	39	67.2	19	32.8	0.394	0.000
	Does not support	11	26.8	30	73.2		

Table 2 above indicates that the observation of the majority (80%) of respondents either category on implementation of patient safety sub-variables teamwork and communication. Only a small proportion of respondents less category (20%) on the implementation of patient safety sub-variables teamwork and communication in the ED (RSD) Cirebon.

Table 3 showed that less than half (49.5%) category lacking implementation of patient safety, only half (50.5%) categories, both in the implementation of patient safety in the ED (RSD) Cirebon.

Based on the results in Table 4, it shows the p-value <0.05, which means the existence of a positive correlation between the variables of the implementation of patient safety with teamwork variable (p-value = 0.000), communications (p-value = 0.005), the concept of patient safety (p-value = 0.005), and perception (p-value = 0.005).

Discussion

The analysis showed that no significant relationship between teamwork and implementation of patient safety with p value = 0.000. This is in line with several studies Manser (2009) revealed that teamwork can ensure patient safety in service in the emergency department. As well as research Kohn et al. (2000) stated that the multidisciplinary teamwork in the emergency services are essential in providing a safe service. Teamwork is defined as two or more individuals working together to achieve the goals that were set, has a special duty of competence and the role of specialized labor, use of shared resources, and communicate to coordinate and adapt to change (Brannick et al., 1997).

The results also showed that 48.5% of respondents do not support the ED staff perceptions of patient safety, 44.4% of them do not support the perception of sub-variable domain barriers team teamwork and mutual support. Review questionnaire is known that the ED staff did not support the statement item include, things are often not pleasant to cooperate with other staff from the emergency department, ask for help from team members is a sign that an individual does not know how to do his job effectively, provide assistance to the team members is a sign that an individual currently does not have activities to do. These results will impact on the implementation of patient safety. This is in line with research Pronovost et al. (2006) team collaboration among service providers that are not effective are the factors that contribute to unexpected events.

This current study also has pointed out, a significant relationship between communication and implementation of patient safety with p value = 0.005. This is in line with research Woloshynowych et al. (2007) in the emergency department of London stating that communication between health workers is an essential prerequisite for ensuring that the complex clinical environments run effectively and efficiently. These results indicate that the most important objective in the communication activities related to the emergency department patient management. The study also found a significant relationship between communication with patient safety.

Other studies Redley et al. (2017) in the emergency department the city of Victoria reveals that effective interprofessional communication is essential for a comprehensive clinical handover in the ER, where health professionals from different disciplines to work independently but has a complementary role in providing services to patients. Collaborating with other team members in the discussion of handover supported collective wisdom and responsibility for problem solving and decision making. Communication is important to provide information, ideas or feelings for work efficiency and work

safety. It also provides knowledge, establish behavior patterns essential for leadership and teamwork in providing care for patients (WHO, 2009).

The results also showed a significant relationship between knowledge and patient safety in applying the concept of patient safety with a p-value = 0.005. Within the scope of the emergency department, health professionals must be able to manage patient safety risks by using their knowledge to maintain a safe level of patient care (Leape et al., 2009) This is in line with the results of Bawelle et al. (2013), that the level of knowledge of health professionals plays a role in support the implementation of patient safety. In addition, with increasing knowledge of health professionals about patient safety, clinical practice will be of high quality (Bagnasco et al., 2011).

The results also gained a significant relationship between the perception of the ED staff about patient safety and the implementation of patient safety with p-value = 0.005. In line with the results of Aboshaiqah and Baker's (2013) research at Saudi Arabian hospitals which stated that, more than half of health care workers (52%) showed support for the perception and implementation of patient safety. This was also supported by Robin, Stephen, and Judge (2007) who stated that, the perception of health workers about patient safety is the result of the interaction of individuals with environmental conditions influenced by the individual concerned, the purpose of perception and the situation. Other studies Agnew et al. (2013) state that climate patient safety the hospital is positively related to the behavior of the safety of health workers in health care.

Perception is integrated activity within the individual to provide an assessment of the views or opinions of an environmental condition (Sarwono, 2010). Perception is not just limited to the sensing in object or environment alone but the wider health personnel observe objects or environments that give the impression of him, so as to provide an assessment of the views or opinions. Individual perceptions can change, for example, from negative to positive or vice versa. According to Affonso et al. (2003) which states that the perception of health professionals on patient safety influential in the provision of health care, because health workers can ensure safety of services provided for patients.

Conclusion

The results of the study generally show that there is a relationship between the perception of ED staff about patient safety and the implementation of patient safety in ED (RSD) Cirebon.

ED staff support the perception of patient safety, but health workers are still found in the category of lack in the application of patient safety. It is hoped that this research can be input for those involved, especially the ED (RSD) Cirebon in the preparation of work programs and policies to support the improvement of perceptions about patient safety and the implementation of patient safety including training related to teamwork and communication, and developing clear guidelines for health workers. Patient safety education and training using simulation methods can provide an overview in the implementation of patient safety. So it must be a priority for health workers, in an effort to improve the application of patient safety in emergency departments.

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Jurnal Keperawatan Padjadjaran
ISSN 2338-5324 (print)
ISSN 2442-7276 (online)
Online di http://jkp.fkep.unpad.ac.id
DOI : 10.24198/jkp

Quality of Life among Patients Undergoing Haemodialysis in Bandung: A Mixed Methods Study

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Submitted: 04-03-2020 Accepted: 26-04-2020 Published: 26-04-2020

Abstract

Quality of life (QoL) has become one of important outcome measures of renal replacement therapy, including haemodialysis. However, the assessment of QoL is not comprehensively measured and most research about it use quantitative approach. Since QoL is subjective, assessing and understanding the qualitative evidence are very important. This study aimed to explore QoL in patients with end-stage renal disease (ESRD) undergoing haemodialysis. This research is a cross-sectional study used a mixed method approach. Patients undergoing dialysis were recruited from the dialysis unit in one private hospital in Bandung. They completed the Kidney Disease and Quality of Life (KDQOL-36™) questionnaire and then went on face to face interview. Quantitative data were analysed descriptively and qualitative data were analysed using thematic analysis with qualitative data analysis software. A total of 87 patients completed the questionnaires and 34 of them participated in 20-60 minutes interview. The symptom and problem list had the highest mean score (M= M=63.60), indicated that patients experienced lack of energy, mobility and physical appearance that further produced difficulties in their daily activities. Additionally, mental component summary showed a higher mean score (M=49.23) than the physical component (M=36.22) indicated that patients most likely had worse mental health condition than their general physical health. Worse mental health condition induced with negative feeling among patients. Patient's inability to do daily activity and change in physical appearance had impact on their confidence for social relationship. Conclusion: ESRD patients undergoing haemodialysis were bothered by the symptom of illness and worsen by the negative feelings.

Keywords: End-stage renal disease, haemodialysis, mixed method, quality of life.

Editor's Note: This article has been updated on 17 May 2022 in terms of the availability of funding and authorship contribution statement& minor changes in the reference format. The update is according to JKP Policyon article correction.

Introduction

Chronic kidney disease (CKD) is a serious global public health problem, affecting over 750 million persons worldwide (Bikboy, 2018). The number of patients with ESRD (End-stage renal disease) – the last and most serious stage (Pozzoni, 2014) – in Indonesia is continuously increasing. In 2017 the number of patients was 10,8723; rises to 19,8575 in 2018 and patients mostly (98%) underwent haemodialysis (HD) as their treatment regimen (Indonesian Renal Registry, 2018).

While, HD effectively improve patients' life expectancy and quality of life (QoL) (Lee & Bargman, 2016; Tannor et al, 2017; Dabrowska et al, 2018). It involves a complex procedure, requires them to frequently visit hospital or dialysis center, mainly two or three times a week, entails diet and fluid restrictions, and causes some HD related symptoms such as fatigue, decreased appetite, as well as muscle cramps that further lessen the patients' QoL (Avramovic & Stefanovic, 2012; Cavalli et al, 2010; Landreneau & Lee K, 2010). On the other hand, patients with ESRD had to adapt new lifestyle as results of the nature of the illness and the methods of its treatment.

Despite of the advancement of healthcare technologies, it is remains questionable whether or not patients who live longer always have a better QoL. QoL plays an important role in assessing patients' needs, setting the treatment goals, monitoring the disease progression, and developing plans of care that potentially improve patient care outcomes.

Some previous studies had attempted to explore QoL in patients with ESRD undergoing haemodialysis including in Indonesian setting. A study from Suwanti et al (2017) explains that more than half (61.0%) ESRD patients who undergo haemodialysis had a poor QoL. Other research conducted by Mulia et al (2018) shows that patients had moderately good QoL. They displayed higher score in enviromental and social domains of quality of life than in physical and psychological domains. Most of existing studies on QoL only provided a quantitative information and lack of qualitative exploration about patient's quality of life. Since, QoL is subjective and unique matter for each patient, the assessment and understanding of qualitative aspects of QoL are very important. Although it is expensive and time consuming, incorporating qualitative methods generates more through information. Qualitative data enable researchers to generate rich data from the perspective of patients about their QoL (Tonon, G, 2015; Kim, Sefcik & Bradway, 2017).

Mixed method is powerful approach when addressing complex, multifaceted issues, such as living with chronic illnesses (Nicca, 2012). This approach signifies both quantitative and qualitative data that then potentially provide more comprehensive explanation of a phenomenon. This mixed methods study designed to comprehensively investigate the QoL of patients with ESRD undergoing haemodialysis in Bandung.

Method

We conducted a cross-sectional study using sequential explanatory model. This model consisted of two phase, first collecting quantitative data and then gather a qualitative data to help deepen the finding in quantitative phase (Cresswel, 2014). Patients undergoing haemodialysis were recruited from the dialysis unit of one private hospital in Bandung, Indonesia from June 2017 to March 2018. Samples who meet the inclusion criteria were selected by convenient sampling. The inclusion criteria were as follows: (1) confirmed diagnosis of ESRD from medical record (2) patients at least 18 years old, (3) on regular haemodialysis therapy for a minimum of 6 months. The patients were excluded if they lacked the physical and mental capacity to communicate with the interviewer.

Nephrologist and nurse screened patients who met the criteria and gave the list to the researcher. Then researcher approached the patients to explain the details of the current study and asked their willingness to participate. Once they agree to participate in this study, the researcher asked them to sign the informed consent form. Patients were also asked their willingness to be interviewed, and those who agreed were scheduled for interview.

The current study was approved by the Research Ethics Committee of Universitas Padjadjaran under the ethical certificate No. 349/UN6.KEP/EC/2018. Each participant was well informed of the content and the aim of the research.

The Kidney Disease and Quality of Life (KDQOL-36™), a self-reported questionnaire that combines the generic SF-36 Health Survey Instrument and disease-specific components for assessing the health-related QoL of patients with chronic kidney disease was used to measure QoL among ESRD patients in this study. We accesed the questionnaire from RAND health and downloaded it from RAND corporation website. KDQOL-36™ focused on the underlying health status during the preceding 4 weeks. It consists of 36-item survey with five subscales: (1) symptom and problem list (2) effects of kidney disease (3) burden of kidney disease (4) physical component summary (PCS) and (5) Mental component summary. There were 24 items asking about disease-specific cores: symptom and problems (12 items), burden of kidney disease (4 items), and effects of kidney disease (8 items). Additionally, there were 12 items of the generic core adopted from SF-12 instruments, which were divided into the physical component summary (PCS) (8 items) and the mental component summary (MCS) (4 items) (Hays et al, 1994).

The adaptation process used the forward and back translation by two bilingual psychologists to prepare the Indonesian version of KDQOL-36TM. The Cronbach Alpha coefficient was examined on the subscales to determine internal consistency. The Cronbach's alpha for each subscale of the Indonesian version of the KDQOL-36TM in the current sample is as follows: physical functioning = 0.743, mental functioning = 0.579, burden of kidney disease = 0.763, symptom/problems = 0.797 and effect of kidney disease = 0.801.

Validity based on content was provided by using Focus Group Discussion (FGD) with patients, nephrologist and nurse on haemodialysis unit to assess the clarity, relevance and interpretation of each item in KDQOL-36TM scale. Each proxy could give a feedback about the questionnaire until we achieved some degree of consensus and the Indonesian version of KDQOL-36TM scale was finalized.

The qualitative data were collected through 20–60 min interviews with 34 participants. A semi-structured interview technique was utilized to acquire information from the participants. The participants were interviewed on the following : (1) Exploration of how the illness symptoms affect patient's daily life and (2) The impacts of illness and treatment on patients' psychological conditions. Research assistant with background of psychology will conduct data collection. They are three master students from clinical psychology program who first received a 2-day training session by the researcher. The training covered information about (1) quality of life in patient who undergoing haemodialysis, (2) general interview techniques and (3) how to administer the data. Quantitative data were analysed descriptively; raw scores on KDQOL-36TM were transformed to a score ranging from 0 to 100 with higher score representing worse perceived QoL. Demographic data are presented as frequencies and percentages while score of QoL presented as mean and standard deviation (SD).

In qualitative phase, all interviews were audiotaped and transcribed verbatim in word document. Researcher and two coders with psychologist background analysed the data using thematic analysis (Bradley, 2007) with qualitative data analysis software to identify recurring patterns in the transcript (Vaismoradi M, 2013).

Results

A total of 87 patients with ESRD were recruited from the haemodialysis unit of a private hospital. On the basis of the demographic and clinical characteristics, 44 patients were male and 43 patients were female, age ranged from 18 to 77 years old (M = 43.9, SD = 14.115), mostly married, finished high school, and unemployed or as a housewife. Majority of them were undergoing dialysis twice a week and the common causes of kidney disease were hypertension and diabetes mellitus. An overview of the socio-

Table 1 Demographic and Clinical Characteristics of Study Participants

Variables	n	Percentage (%)
Gender		
Male	44	50.6
Female	43	49.4
Age Range		
≤ 35	28	32.2
36–50	29	33.3
51–65	24	27.6
≥ 65	6	6.9
Marital Status		
Single	10	11.5
Married	74	85.1
Widowed	3	3.4
Education		
Junior High School	6	6.8
Senior High School	45	51.7
College	36	41.4
Employment		
Housewife/unemployed	46	52.9
Employed	36	41.4
Retired	5	3.7
Duration on dialysis (months)		
< 12 months	21	24.1
1–3 years	40	46
4–6 years	16	18.4
> 7 years	10	11.5
Frequency Dialysis per week		
Once a week	4	4.6
Twice a week	83	95.4
Cause of kidney disease		
Diabetes Mellitus	10	11.5
Hypertension	55	63.2
Any other causes (lupus, self-medications, unhealthy diet/ drink, etc.)	22	25.3

Table 2. Scores for each Dimension of QoL in ESRD Patients

Dimensions	Score
Symptom/Problems List	63.60±17.60
Effect of Kidney Disease	58.91±19.72
Burden of Kidney Disease	49.13±23.73
Physical Component Summary	36.22±8.02
Mental Component Summary	49.23±8.95

demographic data and clinical characteristics of the study participants is presented in the table below.

Quantitative data of QoL

The mean score and standard deviation for each dimension of QoL was listed in Table 2. The symptom and problem list had the highest mean score (M=63.60) of the 5 subscales on the KDQOL-36TM. It can be interpreted that ESRD patients reported feeling very bothered by the symptoms of kidney disease and problem related to the symptoms. They were aggravated by fatigue, sore muscles, chest pain, itchy, dry skin, shortness of breath, lack of appetite and problem with access to dialysis.

Patients were also displeased by the effect of kidney disease in their daily life; such as fluid and diet restriction, ability to travel, work and dependency on dialysis treatment. The lowest mean score found in burden of kidney disease subscale (M=49.13), which mean patients perceive that their illness cause interference in their daily life, frustration, takes up more time and makes them feel like a burden.

The assessment of patient's overall health, mental component summary (M=49.23) showed a higher score than the physical component (M=36.22). It can be said that patients most likely had worse mental health condition than their general physical health. Patients most likely have worse mental health condition which encompass feeling such as fear, sadness and frustration. In general physical health, even though the patient has decreased energy levels caused by the effect of the illness, the patients can still do some level of mild physical activity.

Qualitative phase

A total of 34 participants (20 females and 14 males) took part in the interview session. The participants were selected conveniently according to their accessibility and willingness to participate in this study. Their mean age was 48.17 years (range 25–77 years). The mean duration of hemodialysis was 32.24 months (range 6–84 months), and all of them were undergoing dialysis twice a week. The result of this phase was summarized in three themes: (1) decrease energy levels and mobility, (2) social relationships, and (3) negative feeling. These themes will be elaborated in the remaining part of this section.

Decreased energy levels and mobility

Decreased energy levels impacted the lives of patients. The majority of patients can only spend their time at home because they felt weak, fatique and less energized. Many female patients (52.9%) chose to be housewife and just worked on light house chores, such as sweeping and washing dishes. All male patients (50.6%) were unproductive to be at work and chose early retirement. This low working capacity is caused by many symptoms, such as breathlessness, itches, nausea, lack of appetite, and difficulties to walk because of edema. The interrelationship between decreased energy levels and mobility is illustrated:

"My stamina is almost 80% decrease compared to before I fell ill, now I couldn't go to work. I chose early retirement and spend my days at home every day. For 24 hours, my body feels bad, sitting is wrong and sleeping isn't good. I have frequent decline in health conditions, so I can't go anywhere" (M, 56 years).

"Since I was sick I applied for early retirement ... don't even go to work, for daily activities I often feel tired. I could not drive because I had passed out on the road. Now I'm just at home ... accompanied by oxygen tanks cylinders because of frequent shortness of breath too. Now I have difficulty walking ... swollen legs ... cause of excess drinking" (F,61 years)

Loss of energy and decline in mobility might explain the greater perceived symptom and problem related to kidney disease by the patients. This finding also suggested how kidney disease could severely impact patient's physical condition to the point they were unable to do things they used to do.

Social relationships

Physical changes experienced by patients, such as blackened skin, weight loss, and scarring, affected the patient's level of confidence for social relationships.

"I'm embarrassed. People like to take selfies when they meet up nowadays. I feel

ugly and unattractive. I look older than my age too. (I'm) skinny, pale, and I don't look good in photos. Others look good and happy in photos... I can't do that." (F, 29 years)

"Since I was ill, I've become very thin. My skin grew dry and darker. So, I have to wear long-sleeved clothes to cover the fistula. They are ugly, as big as eggs. I'm not confident in my appearance" (M,31 years)

Negative feeling

The patients in the beginning of undergoing dialysis had many negative feelings, such as fear, sadness, anxiety and frustration. Haemodialysis treatment was done because "there is no other choice." Although it is important, it has become a burden because the treatment is very painful.

"For me, what bothers me the most is that I have to undergo dialysis for the rest of my life. It makes me anxious and feel like an invalid because my life is supported by machine." (M, 27 years)

Depression was a common psychological response. Majority of the patients expressed feelings of depression, namely, thoughts about death and hopelessness, as described by one patient:

"If I remember how miserable is, I thought about wanting to die faster. But I'm very anxious…afraid of death, … afraid of the sins. Worries that always appear to me is if anytime 'I'm taken away'. If I remember how difficult it is to manage my health, I feel hopeless and I want everything to 'end'. But the thought that present time is 'waiting time' and there is 'empty seat' which ready to be 'filled' whenever God wills. It makes me often feel sad and doing a lot of daydreaming." (M, 29 years)

It is understandable if the patients experienced more negative feelings caused by their health condition. Physical conditions, which often decrease, made patients visit the hospital back and forth. This scenario raised negative comments from others on patients who made them feel sad. This following statement describes a patient's experience regarding this matter:

"I feel sad if I listen to other people comment about kidney disease is incurable illness, will get sick for the rest of my life. If my condition is dropping and need to be treated in emergency room, there is always someone commenting 'why are you always sick?" (F, 36 years)

All patients were given social support by caregivers, including family member, spouse, and children. Although all patients found that family is a source of energy to live, the support given by the family has an ambiguous feeling. It was perceived as social support by the patients, but they felt guilty because they became a burden to the family on the other hand.

"Family, husband, children, and grandchildren are very supportive about getting treatment regularly. Even my nephew likes to remind me and offer a help to accompany to the hospital. But I always feel to be a burden on my family. Especially to my husband, his income always run out and spend on medication, we can't save money like we're used to, I also feel guilty about not being able to perform my duties as a wife and a mother due to the illness" (F, 43 years)

Patients need support from their family because they have regular schedule for hospital visit to do haemodialysis. The long treatment regimen and the constant need to be helped by caregivers could make them feel like burden. Other than that, patient's health condition often worsen over time so they need more attention from their family.

"I feel like I'm a burden to my family for always needing to be taken back and forth for hemodialysis session every twice a week. My son takes me even when he has work. Especially when I can't breathe, he must ready to take me to the E.R." (F,59 years)

Discussion

Studies show that dialysis is a life-saving treatment, but is often burdensome to ESRD patients, with potentially serious impacts on QoL (Wan et al., 2015). In this study, QoL was defined as a multiple-dimension concept that concerns an individual's usual or expected physical, emotional, and social well-being.

Regarding the domains of QoL, we found that the symptom and problem list had the highest mean score of the 5 subscales on the KDQOL-36TM. Symptom and problem list described how bothered patients feels in daily

life. ESRD patients reported feeling very bothered by the symptoms of kidney disease and problem related to the symptoms. Patients bothered by sore muscles, fatigue, chest pain, cramps, itchy or dry skin, shortness of breath, faintness/dizziness, lack of appetite, feeling washed out or drained, numbness in the hands or feet, nausea or problems with dialysis access (Veerappan et al, 2012).

From the results of the interview, we also discover that fatique emerged as one of the most persistent and debilitating symptoms. Fatique were expressesed as decrease stamina and low working capacity by the patients. Fatigue is a complex and subjective symptom characterised by extreme and persistent tiredness resistant to rest and recuperation. Forty-nine to 92% of dialysis patients suffer from fatigue (Al Mutary, 2013). This condition caused patients feel weak and less energized. It also restricted the ability of patients to perform many activities. They have a limitation in physical activity, especially work related activities that require physical strength and stamina. This result is in line with the previous findings that fatigue is one of the most common and disabling symptoms which can lead to deflation of daily physical activity and physical performance among patients undergoing haemodialysis (Kopple et al, 2015).

This study also showed that the effect of kidney disease bothered in daily life; patient should fluid limit, diet restriction and should attendance haemodialysis session every week. It can be interpreted that patients had to adapt new lifestyle as results of the nature of the illness. A typical haemodialysis patient will be required to attend dialysis sessions 2-3 times a week for 3–4 hours each time. (Mactier, Hoenich & Breen, 2009) and adherence to dietary recommendations, fluid restriction and prescribed medications, are essential for optimal and effective treatment of patients with ESRD undergoing haemodialysis (Kugler, Maeding & Russel, 2011). Patients need social support, especially from family, spouse and also friends (Mailani, 2015). Based on the interview results, we found that the new life style cause patients feel burdened and guilty toward their family who have to go back and forth to take them to the hospitals in order to get treatments.

The assessment of patients' general health, mental component showed that patients had many negative feeling such as fear, sadness, and also expressed anxiety feeling. Negative emotional state characterized by somatic and cognitive symptoms including feelings of sadness and worthlessness, those descriptions were typical mental symptoms in ESRD patients (Palmer et al, 2013). Research from Patimah et al (2015) and Alamsah et al (2018) explains that patients undergoing haemodialysis experience anxiety. Other research demonstrates that QoL of patients with ESRD is mostly affected by living in fear of dying and experiencing stress due to anxiety about the future and their families, disease outcome, and shortened life span (Xhulia et al, 2016). In this study, the patients also verbalized that negative feeling may related to the changes in their body thus make them have negative perception about their physical appearance. Patients expressed feeling bothered by the changes in their body image as a result of side effects from their treatment that affected their confidence in social relationship.

Conclusion

Our study found that QoL of ESRD patients who undergoing haemodialysis bothered physically and mentally because of their illness. Physically, patients disturbed by the symptoms of the illness, burden of living with thus illness and the effect of the kidney disease. All of them inhibited patients to do their daily activities. They also experienced psychological effect of the illness such as negative feelings. The finding from quantitative phase also explained by our finding from qualitative phase.

Limitations

This finding cannot be generalized to the larger population of ESRD patient due to the limited sample population examined. In this study clinical and laboratory parameters that related to QoL of patients were not measured. In next study, clinical studies are needed to assess clinical factors determining QoL, as they can serve as baseline data to develop QoL intervention for improving the QoL related to patients' physical and psychological

conditions.

Acknowledgement

We would like to thank all of the participants who helped conduct the present study. We are also thankful to the research assistants who helped the researcher in data collecting process.

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