Coping and Quality of Life among Indonesians Undergoing Hemodialysis

Kusman Ibrahim, Sunuttra Taboonpong, Kittikorn Nilmanat

Abstract: This study aimed to examine the relationships between coping and the quality of life among Indonesians undergoing hemodialysis. Ninety-one Indonesians undergoing hemodialysis were recruited purposively from three hemodialysis units in Bandung, Indonesia. Subjects were asked to complete the Jalowiec Coping Scale and the World Health Organization Quality of Life-Brief. Findings revealed a negative relationship between the subjects' affective focus coping scores and quality of life scores. No significant association was found between the quality of life scores and either the problem-solving focus scores or the total coping scores. The findings support the notion that using affective focus coping might have a negative effect on quality of life when used for long periods and the problem is not resolved. Nurses regularly should assess the coping strategies of individuals undergoing hemodialysis and facilitate their appropriate coping strategies.

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Introduction

In Indonesia, approximately 200 patients per million of the population experience chronic renal failure (CRF).[1] Most of them require renal replacement therapy to sustain life.[2] Hemodialysis is the most widely used form of renal replacement therapy in Indonesia.[2] Individuals undergoing long-term hemodialysis have been found to be subjected to multiple physiological and psychosocial stressors, and experience personal losses and lifestyle changes.[3] Those who endure a chronic illness, such as CRF, are known to perceive different levels of quality of life (QOL) and exhibit varying coping strategies in dealing with their life stressors.[4] When individuals with CRF have to undergo long-term hemodialysis, it not only impacts their QOL, but also their family's QOL. Coping has been found to be an important factor closely associated with quality of life.[5-7]

Effective coping strategies play an essential role in maintaining one's physical and psychological well-being when dealing with life stressors.[5] Effective coping helps to lessen stress, resolve uncomfortable feelings, preserve ability to effectively

Correspondence to:* Kusman Ibrahim**, *RN, PhD Candidate, Faculty of Nursing, Prince of Songkla University, Hat Yai, Thailand.* ***E-mail: *k.ibrahim@unpad.ac.id*

Sunuttra Taboonpong, *RN, PhD, Associate Professor, Faculty of Science, Nakhon Pathom Rajabhat University, Thailand.*

Kittikorn Nilmanat, *RN, PhD, Assistant Professor, Faculty of Nursing, Prince of Songkla University, Hat Yai, Thailand.*

function in relationships and maintain a positive self-concept that promotes good quality of life.[8] CRF is an incurable disease, thus promoting optimal functioning and well-being is a major aim of nursing care.

Prior coping and QOL studies of individuals undergoing hemodialysis have investigated, separately, either how they cope or their QOL.[3, 9, 10] No studies could be located which have addressed the relationship between coping and the QOL among individuals undergoing hemodialysis, particularly in Indonesia. Therefore, this study aimed to examine the relationships between coping and QOL among Indonesians undergoing hemodialysis.

Literature Review

This study used Lazarus and Folkman's theory of stress and coping,[11] as a framework to explore coping, and Zhan's conceptualization of QOL,[12] as a guide to explore the quality of life of individuals undergoing hemodialysis. Lazarus and Folkman defined coping as the constantly changing cognitive and behavioral efforts one uses to manage specific external and/or internal demands that are appraised as taxing, and that exceed one's resources.[11]

There are two major types of coping methods: problem focused coping, which deals with the problem causing the distress; and, emotion focused coping, which serves to regulate one's emotional response to the problem. Emotion focused coping has been used interchangeably with affective-oriented coping to indicate the strategies utilized to manage the emotions accompanying a stressful situation.[3, 4, 13]

Affective-oriented coping strategies consist of cognitive processes directed at lessening emotional distress without changing the objective situation.[11] The strategies include avoidance, minimization, distancing, selective attention, positive comparisons, and wresting positive value from negative events. As the stressful encounter unfolds, coping becomes extremely important as a mechanism to sustain a positive sense of well-being. Affective-oriented coping, as one type of coping mechanism, may result in positive or negative emotions as an outcome of the coping mechanism. Lazarus and Folkman[11] stated that emotion is closely related to subjective well-being. The positive and negative emotions that are experienced, during a stressful encounter, are reflections of the person's momentary evaluation of his/her well-being or quality of life.[9] With respect to coping, individuals undergoing hemodialysis have been found to: use problem-oriented coping methods significantly more than affective-oriented coping methods to handle stress;[13] use more problem-oriented strategies than affective-oriented strategies;[3] and, more frequently use avoidance (emotion-focused) coping strategies.[14]

QOL has been defined and measured, by nurse researchers, a number of ways.[15] Zhan conceptualized QOL as the degree to which a person's life experiences are satisfying.[12] Therefore, the meaning of QOL arises from the transaction between the person and the environment, which is influenced by personal background, health, social situations, culture and age.[12] Zahn's conceptualization of QOL is congruent with the World Health Organization's (WHOs) conceptualization and definition of QOL; whereby, one's perception of life is viewed within the context of the culture and value systems in relation to one's goals, expectations, standards and concerns.[16]

Prior studies regarding persons undergoing hemodialysis, predominantly, have concentrated on the effect dialysis has had on the individuals, especially on their QOL. Those receiving hemodialysis have been found to perceive their level of physical activity, social activity and satisfaction with life to generally be below average,[4] with fair to poor QOL.[9]

Prior investigations regarding coping and QOL among individuals not requiring hemodialysis have shown relationships exist between how they cope and their QOL.[5, 7] Avoidance coping strategies have been found to be negatively correlated to one's level of QOL.[5] On the other hand, a positive correlation has been found to exist between problem-solving coping strategies and one's QOL.[4] A limited number of studies, however, have investigated, among individual's undergoing hemodialysis, the association between coping and QOL.

Few published studies, in the English or Indonesian literature, regarding coping and QOL of Indonesians undergoing hemodialysis, could be located. This study, therefore, aimed to answer the research questions: 1) What are the characteristics of coping and QOL of Indonesians undergoing hemodialysis? and, 2) What is the relationship between coping and QOL among Indonesians undergoing hemodialysis?

Method

Sample: The size of the sample was determined by power analysis in testing the relationships between two variables.[17] Given a level of significance (α) of 0.05, a power of test ($1-\beta$) of 0.80 and an estimated effect size (γ) of 0.30, the study required at least 81 subjects. Due to the possibility that subjects would not return the questionnaires, the researcher recruited more than the required number. One hundred Indonesians undergoing hemodialysis were approached purposively and asked to respond to the questionnaire.

All individuals undergoing hemodialysis at three hemodialysis units in Bandung, Indonesia were approached to participate in the study. The particular hemodialysis units were selected because they have a high number of hemodialysis patients and are located in the center of the city. Data were collected after approval was obtained from the primary investigator's academic institution, at the time of data gathering, as well as from the Directors of each of the three hospitals used as data gathering sites. The primary researcher met with the head nurses of the three-hemodialysis units, explained the purpose of the study and asked permission to review patients' medical records and gather data within their respective units. Review of the medical records was carried out to identify potential subjects and to obtain information regarding their health profile and hemodialysis.

Criteria for inclusion in the study, included: being 17 years of age or older; currently undergoing hemodialysis; having been in dialysis at least one month; and, being able to communicate in and read Indonesian. The primary researcher: approached those who met the inclusion criteria; explained the purpose of the study; told them they could complete the questionnaires at home and return the questionnaires during their next hemodialysis treatment; and, asked them to give verbal consent to participate in the study. They also were informed that their confidentiality and anonymity would be maintained. Code numbers were used on completed questionnaires and only the researchers had access to the subjects' responses. Those who consented to participate in the study then were given the questionnaires and told how to complete them.

Ninety-one questionnaires were successfully completed within the 3 months of data collection, for a response rate of 91%. The main reason questionnaires were not returned was due to the individuals being transferring to a hemodialysis unit in another city, making it difficult to contact them.

Instruments: Data collection involved the subjects responding to three questionnaires. They were the: Demographic Data and Health Information Form (DDHIF); 40-item Jalowiec Coping Scale (JCS),[18] and, 26-item World Health Organization Quality of Life-Brief (WHOQOL-BREF).[15]

The 18 item DDHIF was developed by the primary researcher, based on relevant literature, to obtain demographic information about each subject. Fourteen of the items were designed to obtain general demographic information about each subject's: age, gender, religion, educational level, occupation, level of income, means of treatment payment and family relationships. The other 4 items sought personal health information and present health status about the subjects: length of time on dialysis, frequency of dialysis in a week, recent therapy used, and whether other chronic illnesses existed.

The JCS, developed in 1979, consists of 15 problem-oriented and 25 affective-oriented items based on the Lazarus and Folkman's theory of stress, appraisal and coping.[19] Subjects are asked to rate each item on a 5-point Likert-like scale (1 = never to 5 = almost always). The total score of the JCS is calculated by summing the responses to all 40 items of the questionnaire, while the sub-score of problem-oriented and affective-oriented coping are obtained by summing responses to items within the problem-oriented and affective-oriented coping categories. The total coping score can range from 40 to 200, while the affective-oriented coping strategies score can range from 25 to 125 and the problem-oriented coping strategies score from 15 to 75. Higher scores denote coping strategies the subject uses most often. The reliability coefficient of the original English version of the JCS was 0.79 for the total scale; 0.85 for the problem-oriented coping sub-scale and 0.85 for the affective-oriented coping sub-scale.[20] Permission for use and translation of the instrument was obtained from Dr. Anne Jalowiec.

Since Zhan's conceptualization on quality of life did not specifically address the tool to measure QOL, the WHOQOL instrument was used. The 26-item WHOQOL-BREF was developed, in 1994, by the WHOQOL Group.[16] The instrument measures the complex way one assesses his/her physical health, psychological state, level of independence and social relationships, as well as his/her relationship with the environment. Two items assess overall quality of life and general health, while 7 assess physical health, 6 psychological health, 3 social relationships, and 8 environmental dimensions. Responses to all items are rated on a 5-point Likert-like scale. The response to an item depends upon the focus of the question being asked (i.e. intensity, capacity, frequency and evaluation). For intensity, the following scoring method is used: 1 = not at all, 2 = a little, 3 = a moderate amount, 4 = very much and 5 = an extreme amount. For capacity, the scoring method used includes: 1 = very dissatisfied, 2 = dissatisfied, 3 = fair, 4 = satisfied and 5 = very satisfied. The scoring for frequency includes: 1 = never, 2 = seldom, 3 = quite often, 4 = very often and 5 = always. Finally to score evaluation, the following values are used: 1 = very poor, 2 = poor, 3 = fair, 4 = good and 5 = very good.

Negatively-worded items are reverse-scored before calculating the total score. The total score is obtained by summing responses to all 26 items. The sub-scores for each dimension are calculated by summing the responses to items within the respective dimension. The total WHOQOL-BREF score can range from 26 to 130. Item scores are scaled in a positive direction, with a higher score denoting a higher QOL. Cronbach's alphas for the 4 domains have been found to be: 0.82 for physical health; 0.81 for psychological health; 0.68 for social relationship; and, 0.80 for environmental dimensions indicating the instrument has good psychometric properties.[21] Permission to use and translate the WHOQOL-BREF was obtained from the WHOQOL Group, Department of Mental Health, WHO, *whoqol@who.ch.*

Since all the instruments originally were in English, they were translated into Indonesian using the "translation-back-translation" technique

recommended by Sartonius and Kuyken.[22] Two bilingual experts from the Faculty of Nursing, University of Indonesia, and Universitas Padjadjaran, as well as an experienced nurse from one of the hemodialysis units were involved in the translation process. The subjects took approximately 90 minutes to complete the 3 questionnaires.

Data Analyses: Descriptive statistics were used to analyze the demographic data, coping strategies and QOL of the subjects. Pearson's product-moment correlation (r) was calculated to determine the relationships between the subjects' coping strategies and their QOL.

Results

Subjects' demographic and health characteristics: The 91 subjects ranged in age from 23 to 73 years (mean = 52.13), and, predominantly, were: male (n = 49; 53.8%); Muslim (n = 88; 96.7%); retired government employees (n = 30; 33.0%); graduates of a senior high school (n = 36; 39.6 %); earners of a monthly income of 500,000 to 2,000,000 Indonesia Rupiah ($56- $220 USD) (n = 54; 59.4%); and; able to self-pay the cost of hemodialysis treatments (n = 14; 15.4%). Almost half (n = 42; 46.2%) had received hemodialysis for one to five years (mean = 2.5 years) with the majority (n = 82; 90.1%) undergoing hemodialysis twice a week. A few of them (n = 10; 11%) used, as a complement to dialysis, traditional medicines such as: herbs, massage, acupressure, fruit juice and honey therapy. In addition, over 47% (n = 43) had other illnesses, including: hypertension (n = 19; 20.9%); diabetes mellitus (n = 7; 7.7%); cardiovascular problems (n = 6; 6.6%); gastrointestinal tract problems (n = 4; 4.4%); or, neuromuscular symptoms (n = 2; 2.2%).

Coping methods: The mean scores of the subjects' affective-oriented coping, problem-solving coping, and total coping were 59.33 (SD = 10.35), 45.88 (SD = 9.225), and 105.21 (SD = 16.46) respectively.

Quality of life: The mean scores of the participants' physical health, psychological health, social relationships, environmental dimension and total QOL were 18.49 (SD = 4.55), 19.05 (SD = 3.79), 9.25 (SD = 2.10), 24.33 (SD = 4.22), and 76.67 (SD = 12.77) respectively. Fifty-two (57.1%) of them ranked their QOL very poor to fair. The others ranked their QOL good to very good. Most (n = 39, 42.9%) subjects perceived their general health to be unsatisfactory to very unsatisfactory.

Relationship between coping and QOL among the subjects: Results of the correlational analysis, using Pearson's correlation coefficients, are presented in **Table 1.** To determine whether a correlation existed, becauseof influencing demographic factors, between coping and quality of life, a partial correlation was performed controlling for age, education and income. The results revealed a correlation still existed after control of the variables.

Table 1 Correlations between coping strategies and guality of life (QOL) (n = 91)

	Coping strategies		
	Affective-oriented coping	Problem-solving coping	Total score coping
	Bivariate correlations		
QOL score	-.26*	.08	-.12
	Partial correlations controlling for age, education, income		
QOL score	-.27*	.02	-.16

*p <0.05

Discussion

A negative association was found between the subjects' affective-oriented coping and their total QOL scores. The relationship remained after controlling for the possible confounders of age, education and income. This finding is congruent with prior studies conducted both among individuals undergoing hemodialysis and those not requiring dialysis. Affective coping methods have been found to be negatively related to total QOL among individuals undergoing hemodialysis.[4] In addition, Coelho et al.[5] have shown avoidance coping to be related to poorer QOL among diabetic patients, mainly due to diabetic complications (eye/vision problems, sexual dysfunction, sensory/motor limitations, renal function and gastrointestinal complications), which lead to the use of more avoidance coping methods. In other words, affective-oriented coping may have contributed to the subjects' poor QOL, since the actual problems were not resolved.

Using affective-oriented coping in the initial phase of the encountered stress maybe beneficial to lessen stress and maintain well-being.[14] However, the findings of this study suggest that the more affective-oriented coping was used, the lower the individual's QOL. This may be because problems, associated with hemodialysis, could not be resolved by affective-oriented coping alone.

No association between problem-solving coping and the QOL of the subjects was found in this study. This finding suggests that no matter how often the participants used problem-solving coping, their QOL was not affected. It seems that as long as a problem remains it is difficult to improve one's QOL. Thus, it appears that individuals have to learn to live with their problems or find more effective coping strategies.

Congruent with the findings of Lok,[4] and Gregor and Herbert,[23] the total coping scores of the subjects, in this study, were found not to be correlated with their total QOL scores. Although Lok[4] reported finding a negative correlation between affective coping and QOL, and a positive correlation between problem-solving coping and QOL among individuals undergoing dialysis, when the scores were summed the total coping score was found not to be correlated with the total QOL score. According to Lazarus and Folkman,[11] both problem-focus and affective-focus coping, depending on the context of an event, can facilitate and impede each other in the coping process. It is possible that if one's coping method impedes the overall coping process, there is no effect on the person's subjective well-being or quality of life.

Recommendations

Nurses need to be aware of the various coping methods patients use while undergoing hemodialysis. In order to facilitate appropriate care for those undergoing hemodialysis, an ongoing assessment of coping methods is needed to detect changes in one's coping patterns. Enhancement of coping methods, particularly problem-solving coping, might enable these individuals to better resolve health-related problems. To further improve the QOL of patients undergoing hemodialysis, nurses should assist them by providing support, information and alternative problem-solving approaches. However, it is important to note the use of coping strategies is individual, changes over time and is situation dependent.

Study Limitations

Due to the fact that this study focused on the coping strategies and QOL of individuals undergoing hemodialysis at one moment in time, it

has certain weaknesses. This approach does not address the dynamic process that exists between one's coping strategies and QOL over time. Therefore, it may be advisable to investigate, via a longitudinal study, the coping strategies and QOL of individuals requiring hemodialysis, so as to determine which coping strategies are related to the age of the individual and length of time one is undergoing hemodialysis, as well as determine which problems can be solved by which coping methods. Regarding the subjective nature of coping and QOL, it is suggested that further studies on coping and QOL not only rely on quantitative measurements, but also incorporate qualitative methods to gain more comprehensive information as baseline data to develop appropriate nursing interventions.

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ความสัมพันธ์ระหว่างการเผชิญความเครียดกับคุณภาพชีวิตของผู้ป่วยที่ได้รับการฟอกเลือดในเมืองบันดุง ประเทศอินโดนีเซีย

คุสมาน อิบราฮิม, สุนุตตรา ตระบูรพงศ์, กิตติกร นิลมานัต

บทคัดย่อ: การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างการเผชิญความเครียดและคุณภาพชีวิตของผู้ป่วยที่ได้รับการฟอกเลือด กลุ่มตัวอย่างประกอบด้วย ผู้ป่วยจำนวน 91 ราย คัดเลือกแบบเจาะจงจากหน่วยไตเทียมจำนวน 3 แห่ง ในเมืองบันดุง ประเทศอินโดนีเซีย เครื่องมือที่ใช้ในการศึกษาประกอบด้วย แบบวัดการเผชิญความเครียดของจาโลวิค และแบบประเมินคุณภาพชีวิตขององค์การอนามัยโลก ผลการศึกษาพบว่า การเผชิญความเครียดโดยมุ่งการจัดการด้านอารมณ์มีความสัมพันธ์เชิงลบกับคุณภาพชีวิตโดยรวม ($r = -.27$, $p < 0.05$) การเผชิญความเครียดด้านการมุ่งแก้ปัญหาและการเผชิญความเครียดโดยรวม ไม่มีความสัมพันธ์กับคุณภาพชีวิตโดยรวมอย่างมีนัยสำคัญทางสถิติ ผลการศึกษาแสดงให้เห็นว่า การใช้การเผชิญความเครียดโดยมุ่งการจัดการด้านอารมณ์ก่อให้เกิดผลกระทบเชิงลบต่อคุณภาพชีวิตโดยเฉพาะหากมีการใช้เป็นเวลานานอย่างต่อเนื่อง ทั้งนี้เนื่องจากสาเหตุของปัญหานั้นยังคงไม่ได้รับการแก้ไข ดังนั้นพยาบาลจึงควรมีการประเมินถึงวิธีการใช้การเผชิญความเครียดของผู้ป่วยอย่างสม่ำเสมอและพยายามสนับสนุนให้ผู้ป่วยที่ได้รับการฟอกเลือดได้ใช้วิธีการเผชิญความเครียดที่เหมาะสมกับตนเอง

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ติดต่อที่: คุสมาน อิบราฮิม, *RN, PhD Candidate, คณะพยาบาลศาสตร์ มหาวิทยาลัยสงขลานครินทร์ หาดใหญ่ ประเทศไทย*
E-mail: *k.ibrahim@unpad.ac.id*
สุนุตตรา ตระบูรพงศ์, *RN, PhD, รองศาสตราจารย์ คณะวิทยาศาสตร์ มหาวิทยาลัยราชภัฏนครปฐม ประเทศไทย*
กิตติกร นิลมานัต, *RN, PhD, รองศาสตราจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยสงขลานครินทร์ หาดใหญ่ ประเทศไทย*