

The Relationships between Spirituality, Coping Strategies, and Psychological Distress among Haemodialysis Patients

Nurul Najihah Mohamed Shukri¹

Abdul Rahman Ahmad Badayai*¹

¹*Faculty of Social Sciences and Humanities
The National University of Malaysia*

*Corresponding e-mail: [arab5487@ukm.edu.my]

Living as end-stage renal failure patients undergoing haemodialysis can be a challenge because there are restrictions in daily life. Spirituality aspects and coping strategies may play an essential role in individuals' psychological distress. Therefore, this study aims to investigate the aspect of spirituality and coping strategies with psychological distress in haemodialysis patients. Participants were 64 patients undergoing haemodialysis in Kepala Batas, Pulau Pinang. Pearson correlations and multiple regression were conducted to examine the relationship and predicting the best predictor of psychological distress. Instruments used were Daily Spiritual Experience Scale, Coping Strategies Short-Form, and Kessler-10. Results showed that there were significant correlations between spirituality aspects and psychological distress. This study also confirms that there was a significant relationship between problem-focused engagement and emotion-focused engagement with psychological distress. Likewise, emotion-focused disengagement and problem-focused disengagement also reported having a significant relationship with psychological distress. Additionally, emotion-focused disengagement was the leading cause of psychological distress among patients. Therefore, it implies that spirituality aspects and using the right coping strategies can help in managing patients' psychological distress to lead a more positive and improve everyday life.

Keywords: Spirituality aspects; coping strategies; psychological distress; haemodialysis patients

Chronic kidney disease gains much attention lately, and it has become one of the leading diseases that causes death around the globe (Neuen, Chadban, Demaio, Johnson & Perkovic, 2017). Based on Malaysia Dialysis and Transplant Registry (2015) end-stage renal failure (ESRF) patient has increased two-fold in 10 years. The alarming issue is not just an increasing number of patients but also ESRF patients' psychological conditions. ESRF patients fall into distress because of the changes they facing and trying to adapt to their new life is not an easy task for them (Norhayati, Asmawati & Norella, 2015; Al Nazly, Ahmad, Musil & Nabolsi, 2012).

Psychological distress is an emotional state associated with depression, anxiety, and irritation (Mirowsky & Ross, 2002). This condition happens when people cannot handle their hopelessness, frustration, and dangerous situations that eventually make them fall into psychological distress (Nefissa, Mohammed, Ikram, Essam & Fatma, 2011). ESRF patients have to go through these situations, and they are vulnerable, falling into distress if they cannot cope with their current situation. Coping based on Lazarus and Folkman (1984) is a change in cognitive and behavior to face the situations they facing that exceed their abilities (Dysvik, Natvig,

Eikeland & Lindstrom, 2005). There are several types of coping that can be used, such as engagement coping, emotion-focused, problem-focused, or disengagement coping, but it is all based on how one appraised the situation.

Besides that, spirituality can also become a weapon for chronic patients to face their unfortunate situation. Spirituality, according to Pargament, is searching for something sacred in dealing with adverse life events, and this transcends between those who have beliefs and those who do not (Xu, 2016; Kneipp, Kelly & Cyphers, 2009). There are significant challenges for ESRF patients, not just about undergoing haemodialysis every week, but also restrictions in everyday life will put them in a zone that can quickly fall into psychological distress. This study is not just to understand how coping and spirituality aspects can ease patients' psychological distress but also improves our medical healthcare to give holistic services to patients.

Relationship between spiritual aspects and psychological distress

The aspect of spirituality is born from within the individual. It is seen as a feeling of having a relationship with divinity or other spiritual aspects. Aspects of spirituality diminish anxiety and depression of an individual and thus resulting in lower psychological distress. The results are similar to Reynolds, Mrug, Hensler, Guion & Madan-Swain (2014) study conducted on 128 cystic fibrosis and diabetes patients, proving that positive spiritual coping predicted low depression among patients. Thus, it shows that spirituality does helping patients in controlling their psychological distress level since depression is an aspect of psychological distress.

Research by Kidwai et al. (2014) also found the importance of believing in God and its relation to psychological distress among

patients. Believing in God was measured by religious attendance, and findings showed that the higher frequency of attendance, the lower psychological distress levels among samples. Kidwai et al., (2014) prove that doing something spiritual such as attending religious services, can give benefits such as having lower psychological distress.

Even so, past researchers see religiosity or spirituality in a whole life context, whereas the state of spirituality can increase or decrease every day. Thus, there is a need to measure the spirituality experienced in daily life because based on Kidwai et al. (2014) study showed that frequent religious attendance resulting in lower psychological distress. Therefore, hypothesis 1 is as follow:

H1: There is a significant relationship between the aspects of spirituality and psychological distress.

Relationship between coping strategies and psychological distress

Coping strategies are an effort cognitively and behaviourally to overcome stressful situations (Lazarus & Folkman, 1984). Engagement coping, such as emotion-focused engagement and problem-focused engagement in some way associated with psychological distress. Previous scholars have proven that problem-focused engagement (PFE) coping was related to psychological distress. Studies carried out by Feudis, Lanciano, and Rinaldi (2015) on 61 women undergoing breast cancer surgery showed that psychological distress negatively associated with acceptance coping. Meanwhile, a study by Tuncay and Musabak (2015) among 106 Turkish amputee veterans finds that PFE was a significant predictor of distress. Tuncay and Musabak (2015) classify PFE as active coping, planning, acceptance, and religion coping by clustering all these coping as one dimension shows that PFE inversely related

to distress. Therefore, hypothesis 2 is as follow:

H2: There is a significant relationship between problem-focused engagement (PFE) coping with psychological distress.

Emotion-focused engagement (EFE) coping which defines as emotional reactions or how one has regulated their emotions when facing stressful situations, and it is one of the most used coping amongst patients based on Gilbar and Zusman (2007). The study examined 57 women with breast cancer showed that not only EFE was most used but also impacted the patient's psychological distress. In a subsequent study on 114 children with cancer in Lebanon finds EFE in terms of social support showed a significant relationship with psychological distress (Lakkis, Khoury, Mahmassani, Ramia & Hamadeh, 2015). It can be said that having social and moral support by someone close can reduce psychological distress based on past studies. Therefore, hypothesis 3 is as follow:

H3: There is a significant relationship between emotion-focused engagement (EFE) coping with psychological distress.

Another study tested 61 breast cancer patients, which aim to investigate the role of coping strategies with emotional distress. Feudis et al. (2015) found that disengagement coping predicts distress since there was a significant negative relationship between disengagement coping and distress. An experiment by Silva, Muller, and Bonamigo (2006) on 115 patients with the disease to assess which coping strategies contribute to psychological distress. The result showed that avoidance coping, which one type of EFD coping more significant in the group that shows a high level of distress. With this disengagement, coping has a relationship

with psychological distress. Therefore, hypothesis 4 and 5 are as follow:

H4: There is a significant relationship between problem-focused disengagement with psychological distress.

H5: There is a significant relationship between emotion-focused disengagement with psychological distress.

Methods

Study design and participants

This quantitative study was conducted using a self-administered questionnaire to collect data. This study was carried out in 4 haemodialysis centres across Kepala Batas, Pulau Pinang. A total of 64 patients undergoing haemodialysis consisting of 31 males and 33 females were involved in this study. This number was determined by using Krejcie and Morgan's (1970) table for sample size. Participants' age ranged from 18 years old until 69 years old. The sampling method used was purposive sampling, where participants were chosen based on a specific criterion, which was a haemodialysis patient. Apart from that, the snowballing technique was used when having troubles reaching for participants in one of the haemodialysis centres.

Instruments

A questionnaire comprised four sections in which one section was to identify the socio-demographic of the participants while another three sections were to evaluate the spirituality aspects, coping strategies, and psychological distress of the participants. Daily Spiritual Experience Scales (DSES) by Lynn Underwood (2002) was used to measures spirituality aspects with 16 questions altogether. Fifteen items were measured with a 6-point Likert scale, which was 1 (never) to 6 (many times a day). For question number 16, it was measured using a 4-point Likert scale: 1 (not close at all), 2 (somewhat close), 4 (very close), and 6 (as

close as possible). Gaining a high score for DSES exhibits a high level of spirituality. The Cronbach's alpha for this scale was 0.96.

Coping strategies, on the other hand, were measured using the Coping Strategies Inventory Short Form (CSI-SF). CSI-SF was used to determine types of coping, which are problem-focused engagement (PFE), emotion-focused engagement (EFE), problem-focused disengagement (PFD), and emotion-focused disengagement (EFD) used by patients.

The CSI-SF is a 16-item self-report instrument developed by Tobin, Holroyd, Reynolds, and Wigal (1989). Items were measured with 5 Likert scales ranging from 1 (never) to 5 (always). The total scale was computed, and the high score for that dimension determine individuals' type of coping strategies. In this present study, the Cronbach's alpha for CSI-SF was ranged between 0.60 until 0.84.

Psychological distress, which was the dependent variable, was analyzed using Kessler-10 (K-10). There are only 10-items on this scale, and participants were asked to rate on a 5-point Likert scale with 1 (never) to 5 (always). A high score of K-10 indicates a high level of psychological distress, and low scores indicate a low level of psychological distress. Cronbach's alpha for K-10 in this study is 0.86.

Procedures and data collection

The study was carried out once the approval from the targeted haemodialysis centre across Kepala Batas, Pulau Pinang been received. Participants were approached at their haemodialysis centre, and a brief aim of this study was given before giving out a questionnaire to participants. The data collection began in early Mei 2018 until the end of Mei 2018.

Data analysis

In this study, descriptive statistics, Spearman's correlation analysis, and multiple regression analysis were selected. Descriptive statistics were used to examine the frequency, percentage, the mean and standard deviation for demographic variables such as gender, age, religion, ethnicity, and employment status. Besides that, descriptive analysis was used to determine the levels of spirituality, psychological distress, and types of coping strategies used among participants. Next, Spearman's correlation was used to test our hypothesis. By using this analysis, the examination of the relationship between variables based on calculating the correlations coefficients can be executed. Lastly, multiple regression analysis was used to examine which coping strategies have the most significant influence on psychological distress. The analysis was done using Statistical Package for the Social Sciences version 21.

Results

Descriptive analysis

Table 1 shows the results of a descriptive demographic analysis of 64 respondents involved in this study. A total of 33 respondents were represented by women, with a percentage of 51.6%. Moreover, 31 male respondents were representing 48.8% of all respondents. Most respondents are in their 40s, ranging from 40 to 49 years with a frequency of 18 people (28.1%) followed closely by those aged 30-39 and 40-49 with each 16 (25.0%) and 15 (23.4%). 51 (79.7%) respondents had Islam denominations, Buddhism, and other religions hold the same number of respondents, with each having six respondents (9.4%). Meanwhile, only 1(1.6%) respondent was a Christian denomination and no respondent from Hinduism. Most respondents were Malay

(75%), followed by 9 Chinese respondents (14.1%), seven other ethnicities (10.9%), and none of the respondents were Indian.

Concerning occupations, 27 (42.2%) respondents had a job and still working. While 37 (57.8%) respondents, which was the majority of the sample, are unemployed. None of the respondents were still studying. As for the duration of haemodialysis

treatment, 12 (18.8%) respondents had been under haemodialysis for less than a year. The average respondent with 29 respondents (45.3%) had undergone haemodialysis between 1-5 years. 14 (21.9%) between 6-10 years, and lastly, only 9 (14.1%) respondents were undergoing haemodialysis for over ten years.

Table 1

Distribution of Demographic Variables

Demographic	Frequency (n)	Percentage (%)
<i>Gender</i>		
Male	31	48.4
Female	33	51.6
<i>Age</i>		
18-29	11	17.2
30-39	16	25.0
40-49	18	28.1
50-59	15	23.4
Over 60 years	4	6.3
<i>Religion</i>		
Islam	51	79.7
Christian	1	1.6
Buddha	6	9.4
Hindu	0	0
Others	6	9.4
<i>Ethnic</i>		
Malay	48	75.0
Chinese	9	14.1
Indian	0	0
Others	7	10.9
<i>Employment</i>		
Student	0	0
Working	27	42.2
Not working	37	57.8
<i>Duration of hemodialysis</i>		
Less than a year	12	18.8
1-5	29	45.3
6-10	14	21.9
More than ten years	9	14.1

The study also used a descriptive analysis of all three variables in this study. For spirituality aspects, the majority (48.4%)

respondents showed a low level of spirituality aspects. There were 23 participants (35.9%) were within the mid-

range, and only ten respondents showed a high level of spirituality, with 15.6%.

For coping strategies, most of the respondents used PFE coping (35.9%). Meanwhile, 14 respondents used PFD coping (21.9%), followed by 13 respondents were using EFE coping (20.3%), and only one respondent used EFD coping (1.6%). For a combination of coping strategies among respondents, one respondent used EFE with EFD coping (1.6%). PFE with EFE and PFE with EFD coping, each has the same number of respondents, with two respondents, each combination coping. Lastly, EFE with PFD and PFD with EFD also showed the same percentage and number of respondents, with 6.3% and four respondents, respectively.

Inferential statistic

Missing data, outliers, and normality were checked prior to the inferential statistical analysis. There was no missing data or outliers detected during the cleaning data process. The normality of data was also checked for each variable, and examination of the skewness and kurtosis statistic revealed no problems since all data were within the normality range.

Results of Pearson's correlation shown in Table 2, revealed that there is a significant weak negative relationship with aspects of spirituality and psychological distress ($r = -0.40, p < 0.01$). It showed that the higher spirituality experienced in their daily life, the lower the level of psychological distress of an individual. Therefore, the first hypothesis was accepted since there is a significant correlation between spirituality aspects and psychological distress.

Table 2

Pearson's Correlation between Spirituality Aspects and Psychological Distress

Variables	Psychological Distress	
	<i>r</i>	<i>p</i>
Spirituality Aspects	0.40	0.001

Notes. $**p < 0.01$

The examination of the second hypothesis was there any significant relationship between coping strategies with psychological distress. As predicted, problem-focused engagement (PFE) has a significant negative relationship with psychological distress ($r = -0.36, p < 0.01$). The r-value, which was -0.36, shows a weak relationship between both variables. The correlation result shows that using PFE coping can lower psychological distress experienced by patients. Meanwhile, the third hypothesis showed that emotional-focused engagement has a significant negative relationship with psychological distress ($r = -0.26, p < 0.05$). According to

Chua (2011), -0.026 was considered a very low correlation between both variables. Therefore, the third hypothesis was accepted since it was proven that there was a significant relationship between emotion-focused coping and psychological distress.

Pearson's correlation results for the fourth hypothesis showed significant correlations between problem-focused disengagement and psychological distress ($r = 0.352, p = 0.01$). The PFD coping was positively correlated with psychological distress, and the coefficient shows a weak correlation between both variables. The fifth hypothesis was also accepted since findings

showed that there was a significant positive weak relationship between emotion-focused disengagement coping and psychological distress ($r = 0.45, p < 0.01$).

It proves that those who tend to use EFD coping will experience higher psychological distress than those who do not.

Table 3

Pearson's Correlation between Coping Strategies and Psychological Distress

Variables	<i>r</i>	<i>p</i>
Problem-focused engagement (PFE)	-0.36	0.003**
Emotion-focused engagement (EFE)	-0.26	0.035*
Problem-focused disengagement (PFD)	0.35	0.004**
Emotion-focused disengagement (EFD)	0.45	0.000**

Note: * $p < 0.05$, ** $p < 0.01$

The next analysis focused on which variables was the strongest predictor toward psychological distress. By using multiple regression analysis, a significant regression equation was found [$F(4, 59) = 6.687, p < 0.001$] with an R^2 of 0.312. Based on table 4, it can be seen that EFE coping was not significantly predict psychological distress ($\beta = -0.068, t(64) = 0.568, p < 0.05$). PFD coping was also not significantly predict psychological distress among haemodialysis patients ($\beta = 0.119, t(64) =$

$0.939, p < 0.05$). However, PFE coping was found to have a significant negative coefficient and does predict psychological distress ($\beta = -0.264, t(64) = -2.284, p < 0.05$). EFD coping also found to have a positive coefficient which significantly predict psychological distress ($\beta = 0.347, t(64) = 2.882, p < 0.05$). According to the beta coefficient from Table 4, EFD coping ($\beta = 0.347, p < 0.05$) have the strongest predictive value on psychological distress than PFE coping ($\beta = -0.264, p < 0.05$).

Table 4

Regression Predicting the Contribution of Coping Strategies towards Psychological Distress

Variables	B	β	Sig.
Problem-focused engagement (PFE)	-0.426	-0.264	0.026
Emotion-focused engagement (EFE)	-0.124	-0.068	0.572
Problem-focused disengagement (PFD)	0.177	0.119	0.351
Emotion-focused disengagement (EFD)	0.684	0.347	0.006

Notes. $R^2 = 0.312 (N=64, p < 0.000)$; $F(4, 59) = 6.687, p < 0.001$

Discussion

This research was aimed at investigating the relationship between the aspects of spirituality with psychological distress among haemodialysis patients. Moreover, it

was also aimed to investigate the relationship between coping strategies and psychological distress. Correlation and regression analysis were carried out to test all three variables that existed in this study.

Relationship between spirituality aspect and psychological distress

The findings revealed that there was a significant negative correlation between spiritual aspects and psychological distress among haemodialysis patients. It proves that the higher a person's spirituality, the lower the psychological distress experienced by them. Individuals who have high levels of spiritual aspect will put their dependency on God, or they are optimistic about what is happening, and this can reduce the individual psychological distress, as evidenced in this study. This study was similar to the study conducted by Kidwai et al. (2014) and Zagozdon and Wrotkowska (2017).

The study believes that engaging in spirituality matters in daily life, and feeling the connectedness with the divinity often will result in lower psychological distress. The effectiveness of the application of spirituality or religiosity can motivate patients to engage in other things rather than being disturbed by adverse health conditions, also proved by Burney, Osmany & Khan, 2017; Zagozdon & Wrotkowska (2017).

It is similar to the concept brought by Elkins et al. (1988) that gratitude, trust, and belief in the necessity of doing good has higher power than the power of our own (Lazar, 2010). It ultimately creates tranquillity and strength because patients do not continue to think negatively but accept with an open heart. Aspects of spirituality are the gateway to a better life and a way to find peace despite stressful situations that haemodialysis patients are having.

Relationship between problem-focused engagement coping, emotion-focused engagement coping and psychological distress

The Pearson Correlations findings showed that both engagement coping components, which were problem-focused engagement (PFE) and emotion-focused engagement (EFE), found to be significant and positively correlated with low psychological distress. The study also showed that by using engagement coping such as facing problems heads on or finding social support to get through hard times would result in lower psychological distress. This finding was consistent with the study by Feudis et al., 2015; Gilbar & Zusman, 2007; Ragan, Pugh, Degnan & Berry, 2016 and Tuncay & Musabak, 2015).

The EFE coping, such as having excellent social support or practicing mindfulness, can contribute to lower psychological distress. The study also found that the correlation between EFE coping and psychological distress was similar to PFE coping. However, previous studies contradicting the current finding, such as a study by Roussi, Krikeli, Hatzidimitriou and Koutri (2007) does not find any correlation between PFE and psychological distress. Meanwhile, Lakkis et al. (2016) finding revealed EFE coping plays a better role in lowering psychological distress and more effective than PFE coping.

The result also found that most of the participants use PFE coping, and the correlation result was slightly higher in PFE coping ($r = -0.36$, $p < 0.01$) than EFE coping ($r = -0.26$, $p < 0.05$). The result shows that participants were more comfortable engaging their problem actively, such as reframing or changing their habit to fit their new lifestyle to cope with their distress. However, either way, this study proves that using PFE or EFE as a coping mechanism would still contribute to participants' psychological well-being since both coping shows a correlation between engagement coping and low psychological distress.

Relationship between problem-focused disengagement coping, emotion-focused disengagement coping and psychological distress

Problem-focused disengagement (PFD) coping and emotion-focused disengagement (EFD) coping has a significant and positive relationship with psychological distress. Disengagement coping such as avoidance, isolating from everybody else, and procrastinating can increase psychological distress as this study found. The previous study supports our findings such as Silva et al., 2005; Yu and Sherman, 2015; and Littleton, Horsley, John and Nelson, 2007 that proved disengagement coping has a significant correlation with psychological distress.

The study also showed that EFD's coping with being the most positive predictive value on psychological distress, which means that using EFD as coping can significantly affect patients' psychological distress rather than helping them to cope with their situation. Hemodialysis patients need to adapt to their dialysis treatment and their new lives that limit various activities, unlike when they were healthy. This adaptation process somehow affects the individual, and if they cannot accept their current conditions, they might use avoidance and withdrawal that would contribute to distress. Though disengagement is a coping mechanism; however, this study proved that it would not benefit patients as it only raises their psychological distress rather than increase their well-being.

Conclusion

The study revealed that spiritual aspects and using the right coping strategies could help haemodialysis patients in managing their everyday stress, thus lowering their psychological distress. Findings showed that spirituality could boost the ideas of

positivity so that individuals can feel calm while facing hardship in life. Spiritual aspect shows a great contributor in managing psychological distress, and engagement coping strategies also have a significant impact on lowering one's distress—those who use engagement coping besides disengagement coping, resulting in much stable psychological distress among patients. Facing the troubles heads on rather than avoiding it can make individuals much stronger physically and mentally because they are doing something for the better.

Several limitations identified in this present study and recommendations are suggested for improvements in future studies. First, this study was mainly focused on patients undergoing hemodialysis while there are still a lot of chronic disease patients facing the same psychological distress. Future research could be focused on a new population of chronic patients, or a comparative study between two or many types of chronic patients could widen our understanding regarding these issues.

Next, the distribution between ethnicity in our study has not distributed correctly since most of the respondents were Malays. Preferably in a future study to have a variety of ethnicity and properly distributed between each group so that the findings can look in-depth about spirituality between races.

Lastly, all instruments that were used in this study are the short version of the original instruments since we consider patients' disabilities. In future research may use the original version to measure each of the variables to get an impact finding and research.

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