PERCEIVED SOCIAL SUPPORT AMONG END-STAGE RENAL DISEASE (ESRD) PATIENTS IN KOTA BHARU

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LIST OF SYMBOLS, ABBREVIATIONS OR NOMENCLATURES

ESRD	End-stage Renal Disease
HADS	Hospital Anxiety and Depression Scale
HADS-A	Hospital Anxiety and Depression Scale subscale for Anxiety
HADS-D	Hospital Anxiety and Depression Scale subscale for Depression
HD	Haemodialysis
HRPZ II	Hospital Raja Perempuan Zainab II
HRQOL	Health-related quality of life
HUSM	Hospital Universiti Sains Malaysia
MSPSS	Multidimensional Scale of Perceived Social Support
MSPSS-M	Malay Version of the Multidimensional Scale of Perceived Social Support
PD	Peritoneal dialysis

ABSTRAK (BAHASA MELAYU)

Pengenalan: Penyakit kegagalan buah pinggang kekal *(end-stage renal disease (ESRD))* boleh menjejaskan keadaan psikologi pesakit termasuklah kemurungan dan keresahan. Sokongan sosial telah dikaitkan dengan kesan positif di kalangan pesakit ESRD. Tujuan kajian ini adalah untuk mengenalpasti tahap tanggapan sokongan sosial di kalangan pesakit ESRD, kaitannya dengan kemurungan dan kegelisahan, serta faktor peramal tahap tanggapan sosial. **Kaedah:** Satu kajian keratan rentas telah dijalankan dari Ogos 2019 hingga September 2020 di kalangan 225 orang pesakit ESRD yang menjalani rawatan dialisis atau menghadiri temujanji di unit hemodialisis di Hospital Universiti Sains Malaysia dan Hospital Raja Perempuan Zainab II, dengan menggunakan soalan kaji selidik yang merangkumi profil sosiodemografi, *Multidimensional Scale of Perceived Social Support* versi Bahasa Melayu (MSPSS-M) dan *Hospital Anxiety and Depression Scale* (HADS) versi Bahasa Melayu. Data dianalisa dengan menggunakan ujian *measure of frequency* untuk mengenalpasti tahap tanggapan sokongan sosial di kalangan pesakit ESRD. Analisis korelasi dijalankan untuk mengkaji hubungan antara tahap tanggapan sokongan sosial dan kegelisahan/kemurungan, dan analisis regresi linear dilakukan untuk mengenalpasti faktor peramal kepada tahap tanggapan sokongan sosial. **Keputusan:** Kajian ini mendapati bahawa peserta-peserta mempunyai tanggapan bahawa mereka menerima sokongan tinggi daripada keluarga *(mean 5.99, SD 0.82)*, dan seseorang yang istimewa dalam hidup mereka *(mean 5.51, SD 1.52)*; tetapi menerima kurang sokongan dari rakan-rakan mereka *(mean 4.61, SD 1.32)*. Terdapat hubungan negatif yang signifikan antara kemurungan dan semua subskala MSPSS-M. Kemurungan, status perkahwinan, serta status pekerjaan telah dikenalpasti sebagai faktor-faktor peramal kepada tahap tanggapan sokongan sosial di kalangan pesakit

ESRD. **Kesimpulan:** Pesakit ESRD menerima sokongan tinggi daripada keluarga dan seseorang yang istimewa dalam hidup mereka. Kemurungan mempunyai hubungan negatif dengan tahap tanggapan sokongan sosial dalam semua dimensi. Kemurungan, status perkahwinan dan status pekerjaan merupakan faktor-faktor peramal tahap tanggapan sokongan sosial di kalangan pesakit ESRD. Oleh itu, penilaian sokongan sosial dalam amalan perawatan harian diperlukan untuk memastikan penjagaan individu diberikan secara menyeluruh kepada pesakit ESRD.

ABSTRACT

Introduction: End-stage renal disease (ESRD) can affect patients' psychological well-being including depression and anxiety. Social support has been associated with positive outcomes in ESRD. This study aimed to identify the level of perceived social support, its association with anxiety and depression, as well as its predictive factors. **Methodology:** A cross-sectional study was conducted from August 2019 to September 2020 among 225 ESRD patients who underwent regular dialysis or had follow-up at haemodialysis unit in Hospital Universiti Sains Malaysia and Hospital Raja Perempuan Zainab II, by using a self-administered questionnaires which include sociodemographic profile, the Malay version of the Multidimensional Scale of Perceived Social Support (MSPSS-M) and the Malay version of Hospital Anxiety and Depression Scale (HADS). Data was analysed using measure of frequency for level of perceived social support. Correlation analysis was used to study the relationship between perceived social support and anxiety/depression, and linear regression analysis was conducted to examine independent factors predicting perceived social support. **Results:** Participants felt highly supported by their family (mean 5.99, SD 0.82), and their significant others (mean 5.51, SD 1.52); but perceived lesser support from their friends (mean 4.61, SD 1.32). There were significant negative correlations between depression and all subscales of MSPSS. Depression, marital status, and employment status were the predictors of perceived social support. **Conclusion:** ESRD patients perceived high levels of support from their family and significant others. Depression was negatively correlated with all dimensions of perceived social support. Depression, marital status and employment status were predictive factors of perceived social support in ESRD patients. Assessment of social support in daily

clinical practice is needed to ensure holistic individualized care to ESRD patients.

Keywords: *Social support, MSPSS, Anxiety, Depression, ESRD, CKD*

CHAPTER 1: INTRODUCTION

1.1 Introduction

End-stage renal disease (ESRD) is the last phase of chronic kidney disease (CKD), which usually render the patients in need of renal replacement therapy (RRT) as the kidney function has declined to 15 percent of normal functioning. The treatment modalities of RRT include haemodialysis (HD), peritoneal dialysis (PD) and kidney transplantation. The most common type of RRT in Malaysia is haemodialysis, followed by peritoneal dialysis and renal transplantation, with a 2016 prevalence rate of 1159 per million population (pmp), 127 pmp and 59 pmp, respectively (1).

Worldwide, the prevalence of ESRD has been on the rise, mainly due to the increased diabetes and hypertension prevalence as well as population aging. In the United States (US), there was a 2.6% rise in ESRD prevalence with total number of cases reaching 746,557 in 2017 as compared to 727,912 cases in 2016, giving a point prevalence of 2,206 pmp in 2017 (2). In Malaysia, there has also been an increase in dialysis population, with a prevalence of patients on dialysis of 1,220 pmp in 2016, as compared to 1,155 pmp in 2014 (1,3). In Kelantan, the prevalence rate of dialysis patients has also been increasing from 802 pmp in 2015 to 1468 pmp in 2016 (1).

The prognosis of ESRD remains low, amid advancements in the treatment (4,5). This is partly due to the fact that chronic illnesses such as ESRD has been known to continuously affect patients' physical and psychological functioning. In turn, low social support and other adverse psychosocial factors are linked to increased mortality risk, lower adherence to treatment, and poorer physical quality of life in ESRD patients (6).

1.2 Literature Review

1.2.1 Psychological impact of ESRD

ESRD patients often encountered adjustment problems because of various alterations and limitations in their daily lives such as diet and fluid constrictions, physical and cognitive impairment as well as difficulty to fulfil or accomplish prior roles, duties or activities (7). As a result, adjustment issues such as depressed mood are often seen in these patients, causing a negative impact on the illness outcome.

Furthermore, certain biopsychosocial factors including cognitive-behavioural and social risk factors can have a significant influence on the quality of life in patients with chronic illnesses including ESRD (8). For example, studies showed that ESRD patients have lower levels of health-related quality of life (HRQOL), with depression as its main negative predictor (9,10). Certain studies also found that anxiety is also associated with lower level of quality of life in ESRD patients (10).

1.2.2 Social support in ESRD patients

Social support has been identified as one of the social risk factors that can protect patients against stressors and negative outcome of a chronic illness (8). Social support is a term which means that patients live in networks in which they can obtain and provide assistance to various degrees and where they engage in interactions with others. Social support can usually be obtained from family, colleagues, co-workers, spiritual advisors, health professionals, or members of one's community and neighbourhood (11). The sum of the supportive network, the degree and reciprocity of supportive interaction, as well as the form of supportive interventions are essential social support components (12).

Studies showed that social support are associated with better HRQOL in ESRD patients (9,13,14). It was also found that the availability of social support has an influence on haemodialysis patients' self-management which can in turn enhance their quality of life as well as lessen the mortality and complications rate (15). A study found that ESRD patients who have higher level of social support reported lower levels of somatic complaints (16).

Furthermore, a local Malaysian study have found negative correlations between family support and serum phosphate, which meant that adequate family support can help prevent development of hyperphosphatemia in ESRD patients, which may lead to unfavourable clinical outcomes (17). Other mechanisms in which social support can positively influence ESRD outcomes include decreased levels of depression, improved access to health services, improved compliance to prescribed medications and physiological influences on the immune system (18).

Different levels of social support in ESRD patients were reported across studies. For instance, a study by Ibrahim *et al.* and Theodoritsi *et al.* found that ESRD patients received high levels of support from their family, however, Mohd Isa *et al*. showed that ESRD patients perceived low levels of family support (17,19,20). Ibrahim *et al.* also demonstrated that there were high levels of support from friends in ESRD population, while Theodoritsi *et al.* reported that ESRD patients perceived low support from their friends (19,20).

1.2.3 Factors associated with perceived social support

Research have demonstrated that certain socio-demographic factors such as age, marital status, place of residence, and the number of children are associated with level of perceived social support in ESRD (20). Apart from that, significant association

was also discovered between anxiety/depression and social support, with high levels of anxiety and depression found in patients who perceived less support from their significant others, family and friends (21). Studies showed that depression, particularly its cognitive components, is predictive of perceived social support (22,23). Apart from depression, the disease stage is also a significant predictor for perceived social support (23).

1.3 Justification of study

Research have suggested that social support is clearly one of the most effective components of long-term treatment to ensure a favourable disease outcome and successful patients' adjustment to chronic illnesses including ESRD. A more efficient disease management is achievable with the presence of high social support.

Although the beneficial role of social support to ESRD patients has been shown rather consistently, hardly any research in local setting has been focusing on perceived social support in ESRD patients, as well as its association with other variables such as anxiety and depression. Furthermore, there is scarce evidence regarding the predictive factors of perceived social support in ESRD.

Therefore, a study that evaluates perceived social support in our local ESRD population is needed. Theoretically, this study aimed to close the gap and extend the literature by investigating the level of perceived social support, the association with anxiety/depression, and its predictive factors in ESRD population.

Methodologically, this study utilised a questionnaire that measures perceived social support from three different dimensions, which are significant other, family, and friends. This resulted in the provision of data about multidimensional aspect of perceived social support in the target population. In addition, this study used a

questionnaire that measures the level of anxiety and depression, which allowed for the generation of information about the association between perceived social support and anxiety and depression levels. It is hoped that the results from this study will enrich the literature review of perceived social support in ESRD population in Malaysia and will benefit future researchers.

Practically, this study could potentially provide a framework that can guide the clinicians and health professionals who are involved in the management of ESRD patients in improving the assessment of psychosocial aspect and incorporating appropriate psychosocial intervention, particularly with regards to social support.

1.4 Objectives

1.4.1 General objective

The objective of this research is to study perceived social support, depression, anxiety, and their relationship among ESRD patients.

1.4.2 Specific objectives

1. To determine the level of perceived social support in ESRD patients.
2. To determine the relationship between perceived social support and depression/anxiety in ESRD patients.
3. To determine the predictive factors of perceived social support in ESRD patients.

1.5 Methodology

A cross-sectional study was conducted from August 2019 until September 2020 at Haemodialysis Unit in Hospital Universiti Sains Malaysia (HUSM) and Hospital Raja Perempuan Zainab II (HRPZ II), in Kota Bharu, Kelantan. Convenient sampling method was used. A total of 225 ESRD patients aged between 18 to 75 years who had visited the haemodialysis units for regular dialysis or follow-ups, and had undergone dialysis treatment for at least 3 months, participated in the study by answering a set of self-rated questionnaires consisting of sociodemographic profile, the Malay version of Multidimensional Scale of Perceived Social Support (MSPSS-M), and the Malay version of Hospital Anxiety and Depression Scale (HADS). The data entry and analysis were performed by using Statistical Package for Social Study (SPSS) Version 26.0.

1.6 Dissertation organization

This dissertation is arranged according to the Format B : Manuscript ready format based on the guideline by Postgraduate Office, School of Medical Sciences (2016). The following chapter would be the study protocol that has been submitted for ethical approval. Chapter 3 is the manuscript of 'Perceived Social Support Among End-stage Renal Disease (ESRD) Patients in Kota Bharu' which is ready for submission to the Malaysian Journal of Medical Sciences with the author instruction. The raw data is included in the attached CD.

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CHAPTER 2: STUDY PROTOCOL

2.1 Introduction

End-stage renal disease (ESRD), also known as chronic kidney disease (CKD) stage five is defined as a state of permanent loss of renal function when measured or calculated glomerular filtration rate is less than 15 ml/min permanently (1). ESRD is a chronic illness that is usually progressive and incapacitating (2). Patients who are diagnosed with ESRD will experience significant changes in their lives, including dialysis. ESRD together with dialysis have serious physiological, psychological and socioeconomic implications for the individual, family and community (3).

Globally, the prevalence of ESRD is rising rapidly in developed and developing countries. The increasing numbers is due to aging populations and a pandemic of chronic non-communicable diseases especially diabetes mellitus and hypertension. It was forecasted that the global population of ESRD patients who require dialysis may exceed 2 million by 2030 (4).

In Malaysia, the prevalence of patients with ESRD has been on an increasing trend over the last 20 years while the incidence of dialysis patients continues to grow since the past 10 years - from 4104 in 2007 to 7967 in 2015 and at least 7663 in 2016. The 24th Report of the Malaysian Dialysis and Transplant Registry in 2016 recorded that almost 40 thousand patients were receiving dialysis treatment in 2016. There were 6662 new haemodialysis (HD) cases and 1001 new peritoneal dialysis (PD) cases reported in 2016, resulting in a total number of HD and PD patients 35781 and 3930 respectively (5). The increasing availability of haemodialysis treatment facilities and better access to public or subsidised funding, especially in the nongovernmental sector, have contributed to the growing dialysis population in Malaysia (1).

As compared to the general population, ESRD patients have a higher mortality rate, primarily attributed to cardiovascular and infectious causes (6,7). In Malaysia, cardiovascular disease has been identified as the main cause of death in dialysis patients, and it accounted for 33% of all death in 2016. The second most common cause of death in dialysis patients is sepsis, which accounted for 28% of all death in 2016 (5).

The risk factors that are associated with an increase in mortality rate in ESRD patients include the patient's age, gender, primary renal disease, year starting dialysis, dialysis modality, BMI, diastolic blood pressure and the presence of cardiovascular disease. Meanwhile, serum albumin, serum cholesterol, haemoglobin, calcium, calcium phosphate product, phosphate and hepatitis B status are the biochemical variables that carry a significant risk factor for mortality in ESRD patients (5). Unfortunately, many of these mortality risk factors are not modifiable.

However, psychosocial variables including depression, social support, as well as patients' perception of their well-being, have been shown to carry some impact on clinical outcomes in ESRD patients, and these factors are modifiable (8). Therefore, psychosocial factors are a potential target for successful intervention to promote improvement in the clinical outcomes of ESRD patients (9).

2.2 Literature Review

2.2.1 Overview of Social Support

Social support can be defined as the perception that an individual is a member of a complex network in which the individual can give and receive affection, aid, and obligation (10). It refers to a social network's provision of psychological and material resources intended to benefit an individual's ability to cope with stress (8). It can be obtained from family members, friends, spiritual advisors, health care personnel, or members of one's community or neighbourhood (10).

Social support can be divided into three types: instrumental, informational, and emotional (11). Instrumental social support comprises the provision of material aid to an individual, such as financial assistance. Informational social support implies the establishment of helpful information to an individual pertaining to his/her condition or illness (e.g., guidance). Last but not least, emotional social support includes the expression of empathy towards an individual as well as opportunities to express his/her emotion (12).

In addition to the three types of social support, social integration is considered as another relevant concept pertaining to social support. Social integration refers to participation in a broad range of social relationships, which include behavioural and cognitive components. Behavioural component includes an active engagement in a wide range of social activities or relationships, while cognitive component involves a sense of communality and identification with one's social roles (12).

2.2.2 The Role of Social Support In Chronic Illness

Social support has been well known to play an important role in the patient's adjustment to chronic and acute illness (8,10,13,14). It was common knowledge that chronic diseases have largely superseded acute infectious diseases as the primary cause of disability and death, especially in industrialized countries. The theory of multiple disease aetiologies suggests that instead of a single factor causing a single disease, there are actually multiple behavioural and environmental as well as biologic and genetic factors that combine, often over extended periods, to produce a single disease. It was also postulated that a given factor often play an aetiologic role in multiple diseases (10).

In line with this theory, social relationships have been shown to affect health outcomes by playing a role in moderating or buffering harmful effects of psychosocial stress or other health hazards to an individual. There are numerous and convincing evidence that lack of social relationships constitutes a major risk factor for mortality (10). Similarly, evidence showed that social support has the potential to improve patients' health outcomes. Perceived social support has been proven to have positive link with improved health outcomes in various chronic illnesses, including heart disease (15,16) and diabetes (17).

Although the relationships are consistent and robust, the mechanisms underlying the connection between social support and illness have not been clearly delineated. However, some researchers suggest that social support may modify the course of medical illness in biologic ways, such as through changes in neurologic, immunologic, and endocrine factors (15). Similarly, other authors have also postulated that social support and social integration can provide a better “stress buffering” in

patients with chronic illnesses through improved psychological, neuroendocrine, nutritional, or immunologic functioning (10,18)

There were multiple human and animal studies which found that social relationships and contacts can activate the anterior hypothalamic zone (stimulating release of human growth hormone) and inhibit the posterior hypothalamic zone (and hence secretion of adrenocorticotropic hormone, cortisol, catecholamines, and associated sympathetic autonomic activity). These effects are mediated by the amygdala. This finding may explain how social relationships affect the health outcome in an individual (10).

2.2.3 Social Support in ESRD Patients

Patients with ESRD who undergo dialysis experience a heavy burden on their psychological and social life. As a start, they have to deal with multiple stressors of their illness. Furthermore, they still have to make effort to live their lives by means of maintaining their intimate relationships, families, social networks, treatment programs, and cultures. In addition, they must also cope with the occupational demands, the life role changes, and the challenges due to the restrictions of a life on dialysis. (3,19). Another factor that can increase the risk to develop psychological stress in ESRD patients is the many losses they sustain, which include loss of physical functions such as sexual function, cognitive abilities, and roles in the family and workplace.

Fortunately, social support from family, friends, health personnel, and others could improve the psychological adjustment level to these losses (20). Although it is considered an important modifiable risk factor, social support has been relatively understudied in ESRD, as compared to other chronic illnesses like cancer or

cardiovascular disease (3,13,14,18). However, a literature search in this area identified several relevant studies.

Various studies conducted around the world including Greece, Iran and United States have demonstrated moderate to high levels of social support in ESRD patients (21–23). In most studies, ESRD patients perceived higher support from their significant others and family, while lower support was perceived from their friends (21,22,24). Similarly, in Malaysia, ESRD patients reported high levels of social support, but with main support coming from their family and friends (25). Most studies attributed the supportive relationship with family to the religious beliefs and traditional culture of the importance of family in caring for sick members (22,24).

In addition, evidence showed that levels of social support may vary between the dialysis modalities. This is due to the fact that there is a significant difference in the amount of self-care required for haemodialysis and peritoneal dialysis (26). As a matter of fact, differences in social support between different dialysis groups may attribute to differences in mortality of dialysis patients between units or among national populations (8) most possibly due to differences in compliance level (9).

Studies showed that an increased level of perceived social support was associated with improved survival in ESRD patients even when variation in age, severity of comorbid illness, level of serum albumin, dialysis membrane type, and study site were controlled (3,13,14,27). Moreover, greater levels of perceived social support are also correlated with greater satisfaction with life including increased patient's perception of quality of life (3,25,26,28). Evidence showed that social support was linked to improved health status via several mediators including access to and utilization of health care, compliance, depression, and perception of the burden of illness (23,25–28).

2.2.4 Association between Social Support and Depression/Anxiety

Depression is the most common psychological disorder in ESRD patients. A study in the United States estimated that the prevalence of a depressive disorder in ESRD patients undergoing HD is around 20% to 30% (33). Other studies in the United States and Republic of Korea also found that the prevalence rate of depression in patients with ESRD was as high as 20% to 25% (2,34). A more recent review in Australia showed that there were distinct raised rates of depression in patients with ESRD, with prevalence of interview-defined depression found in meta-analysis to be around 20% (35). Meanwhile, a Malaysian study found that 21.1% of ESRD patients experienced moderate to severe depression (36).

The relationships between depression and ESRD are complex, bidirectional and multifactorial. Studies found that the assessment of depression can be complicated by the overlapping of depressive and uremic symptoms (9,33). Evidence pointed towards multiple poor outcomes comprising of increased mortality and hospitalisation rates, as well as poorer treatment compliance and quality of life in ESRD patients with depression (35). It was hypothesized that depression can affect clinical outcomes in ESRD patients through modification of immunologic and stress responses, impact on nutritional status, and/or reduction of compliance with, or access to, prescribed dialysis and medical regimen (9,33).

Some studies have found links between depression and social support in ESRD patients. Evidence showed that there was a negative association between perceived social support and depression (24,37–39). Higher levels of perceived social support were linked with reduced levels of depression in ESRD population (8,14,40). Evidence also showed that depression can mediate the relationship between patient's

characteristics and perceived social support, such as through its relation with stage of the disease and caregiver burden (38).

Anxiety is a complicating comorbid psychiatric disorder in many patients with chronic illnesses. Compared to depression, anxiety disorders have received little clinical attention in the ESRD population. In this population, anxiety disorders often are perceived to represent symptoms of depression instead of independent conditions (41). One study conducted in Turkey described a 30% prevalence rate of anxiety disorders in patients undergoing HD (42). Another study in the United States demonstrated a 27% prevalence of anxiety disorders in urban HD patients (43). Same author found that 45.7% of subjects met the criteria for an anxiety disorder in another study at a single dialysis centre one year later (41).

Unlike depression, there was scarce evidence describing the relationship between anxiety and social support. A study among ESRD patients in Greece found that there was a negative association between anxiety and perceived social support (39). Similar finding was reported in a study involving elderly population in several European countries (44).

2.2.5 Predictive Factors of Perceived Social Support

Some studies have attempted to determine the factors that could predict the level of social support. Many studies demonstrated that the presence of depressive symptoms are predictive of social support level (24,38,45,46). Specifically, it was found that depressed individuals tend to perceive and receive less social support which could be attributed to negative thoughts as explained by the cognitive theory in depression (45,47).

Studies have also found associations between social support and patients' characteristics. For example, a study conducted in multiple European countries showed that males perceived lesser level of support compared to females (44). Few studies have also found that age was linked with perceived social support (44,48). In a study involving Greek ESRD population, older individuals with age more than 70 years perceived less support from their friends (21). This could be due to the fact that friends being mostly at the same age group possibly are unable to offer help needed. These studies suggest that the elderly are less socially supported and more isolated.

In addition, studies demonstrated that marital status is predictive of perceived social support. Theodoritsi et al. reported that social support from significant others, family and friends was higher in married ESRD patients in Greece (21). Meanwhile, a study conducted in Iran demonstrated that individuals who were not in a marriage institution reported less social support (46). This suggests that lack of marital satisfaction negatively affects perceived social support in a person.

Evidence also showed that household size was related with social support, with greater support received from a larger household; and more supportive relationship was demonstrated in individuals who were living with partner/spouse or other persons compared to persons living alone (44). Patients who have more children also reported more support from significant others and family; and those who lived in a county capital reported high support from their friends (21).

Moreover, illness duration was also found to be predictive of social support. For example, ESRD patients who was diagnosed less that 6 years perceived more social support from significant others and family compared to patients who suffered from the disease more than 6 years (21). Study in other population also demonstrated similar result, for example, a research conducted in Turkish cancer population found

that advanced stage of disease was a significant predictor of perceived social support (38).

A study in Iran also found that individuals who had lower level of physical activity reported lesser social support in general (46). In addition, having a social/sick-leave/other pension as the main source of financial support was also linked with perceived social support (44). Other factors that have been identified as predictive factors of perceived social support include educational level, employment status and monthly income (48).

In view of the evident positive association of social support and health outcomes, including quality of life, survival, compliance, depression and survival, there is a need for studies to explore the effect of interventions to increase social support interventions.

2.3 Problem Statement

End stage renal disease is a major public health problem globally that entails significant burden to patients and their families. The high burden of disease affects patient's quality of life and this may lead to a higher mortality rate. Majority of patients with ESRD experience a heavy psychological and social burden. Several psychosocial risk factors including depression, social support, and patient's perception of well-being, have been proven to be associated with health outcomes in ESRD patients. These psychosocial factors are modifiable and can contribute to lower morbidity and mortality rate.

Social support has been linked to improved health status through several mediators including access to and utilization of health care, compliance, depression, and perception of the burden of illness. Although it is considered an important modifiable risk factor and the relationship to better clinical outcomes has been established, social support has been relatively understudied in ESRD, especially locally. In addition, there is a need for exploration of the level of depression and anxiety in ESRD patients, and how the presence of these conditions affect social support level. Furthermore, by identifying factors that can predict social support, health care providers will be able to utilize the information in order to provide interventions that enhance social support in ESRD patients.

2.4 Rationale of the Study

Globally, there is a growing need for research in psychological aspect of ESRD patients and it has become an important focus in order to provide holistic care. Therefore, finding from this study will provide local data of perceived social support levels as well as depression and anxiety levels in ESRD patients. In addition, finding from this study will offer a base for development of body of evidence on relationship between depression/anxiety and social support, as well as factors that are predictive of perceived social support among ESRD patients. Last but not least, this study may contribute to the development of more holistic intervention for psychological consequences of ESRD patients.

2.5 Research Gap

In Malaysia, there are limited local study focusing on level of perceived social support and its association with depression and anxiety among patients with ESRD. There is also scarce local study that delineate any association between socio-demographic factors, depression, and anxiety with social support in ESRD patients.

2.6 Objectives

2.6.1 General Objective

The objective of this study is to study perceived social support, depression, anxiety, and their relationship among ESRD patients.

2.6.2 Specific Objectives

1. To determine the level of perceived social support in ESRD patients.
2. To determine the prevalence of depression and anxiety in ESRD patients.
3. To determine the relationship between perceived social support and depression/anxiety in ESRD patients.
4. To determine the predictive factors of perceived social support in ESRD patients.

2.7 Research Questions

1. What is the level of perceived social support in ESRD patients?
2. What is the prevalence of depression and anxiety in ESRD patients?
3. What is the relationship between perceived social support and depression/anxiety in ESRD patients?
4. What are the predictive factors of perceived social support in ESRD patients?

2.8 Research Hypothesis

1. There is an association between perceived social support and depression/anxiety in ESRD patients.
2. There is a relationship between the level of perceived social support with depression/anxiety level, sociodemographic, and clinical status in ESRD patients.

2.9 Conceptual Framework

Based on the background information provided by evidence in the literature review, it can be determined that the sociodemographic factors including patient's age, sex, marital status, employment status, financial status, level of education, place of residence, household size and number, number of children, duration of disease, dialysis modality, and level of physical activity affect the level of perceived social support. Meanwhile, depression and anxiety serves as mediating variables that link and help explain the relationship between patient's characteristics and level of perceived social support. In addition, depression and anxiety has bidirectional relationship with the level of perceived social support.

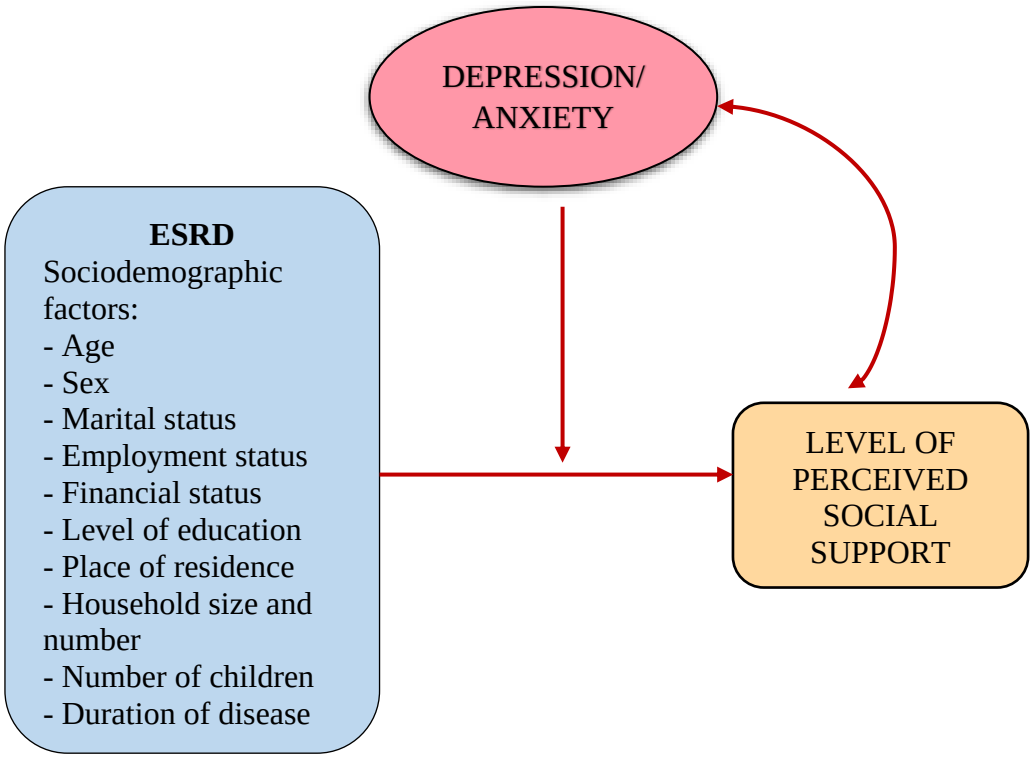

Figure 1.1: Conceptual Framework