

**QUALITY OF LIFE OF END STAGE RENAL
FAILURE PATIENTS UNDERGOING DIALYSIS
TREATMENT IN HOSPITAL UNIVERSITI SAINS
MALAYSIA (HOSPITAL USM)**

by

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**Dissertation submitted in partial fulfilment of the
requirements for the degree of Bachelor of Health
Sciences (Nursing)**

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DECLARATION

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and believe it does not contain any material previously published or written by another person except where due reference is made in the text.



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1 / 7 / 2013

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Date

CERTIFICATE

This is to certify that the dissertation entitled 'Quality of life of end stage renal failure patients in Hospital Universiti Sains Malaysia (Hospital USM)' is the bona fide record of research work done by Wan Nor Amira Bt Mohd Naser, Matric Number 105158 during the period of September 2012 to June 2013 under my supervision. This dissertation submitted in partial fulfilment for the degree of Bachelor of Sciences (Nursing). Research work and collection of data belong to Universiti Sains Malaysia.

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LIST OF ABBREVIATIONS

CKD	-	Chronic Kidney Disease
ESRF	-	End Stage Renal Failure
HUSM	-	Hospital Universiti Sains Malaysia
HD	-	Haemodialysis
PD	-	Peritoneal Dialysis
CAPD	-	Continuous Ambulatory Peritoneal Dialysis
RRT	-	Renal Replacement Therapy
QOL	-	Quality of Life
LVH	-	Left Ventricular Hypertrophy

ABSTRACT

End Stage Renal Failure (ESRF) is a chronic kidney disease that requires for Renal Replacement Therapies (RRT) due to irreversible loss of almost total renal function. Renal replacement therapy is important to avoid life-threatening complication such as uremia and heart failure as well as to prolong patients' quality of life by slowing down the disease progress. The most common RRT opted by patients are Peritoneal Dialysis (PD) and Haemodialysis (HD). Dialysis treatment however, may also causes highly abnormal life lead the patient as they experience many changes on physical, psychological and social functioning that attribute by both the disease process and their ability to cope with such changes. The aim of this study is to evaluate the impact of dialysis treatment on patients' quality of life (QoL) and the overall patients' QoL in Hospital Universiti Sains Malaysia (Hospital USM). A cross-sectional survey was conducted among ESRF patients in two medical wards and Haemodialysis Unit, Hospital USM. Respondent for this study was selected purposively while receiving dialysis treatment. Data was collected within one month period from 15 February 2013 to 15 March 2013 using a set of questionnaire of which consisted of self-developed and validated questionnaire, the WHOQOL-BREF (Malay version). Data was analysed using SPSS version 12.0. Overall, 50 ESRF patients involved in the study (PD, n=17; HD, n=33). Educational level, occupation and family income were found to be significantly associated to patients' QoL. The greater dialysis impact of ESRF patients were psychological and environment. Findings also revealed that ESRF patients' who had experienced greater impact of dialysis treatment had good QoL score. Both PD and HD groups had good QoL (62%). Thus, future research is needed to re-evaluate these findings in further detail.

ABSTRAK

Kegagalan buah pinggang tahap akhir adalah penyakit buah pinggang kronik yang memerlukan rawatan disebabkan kegagalan buah pinggang untuk berfungsi sepenuhnya. Terapi rawatan buah pinggang adalah penting untuk mengelakkan komplikasi yang mengancam nyawa seperti uremia dan penyakit jantung serta dapat memanjangkan kualiti hidup pesakit dengan melambatkan perkembangan penyakit. Rawatan yang biasa dipilih oleh pesakit adalah dialisis peritoneal (PD) dan Hemodialisis (HD). Rawatan dialisis bagaimanapun, boleh menyebabkan hidup pesakit menjadi tidak normal kerana mereka mengalami banyak perubahan pada fungsi fizikal, psikologi dan sosial yang disebabkan oleh kedua-dua proses penyakit dan keupayaan mereka untuk menerima perubahan tersebut. Tujuan kajian ini adalah untuk menilai kesan rawatan dialisis pada 'kualiti hidup pesakit secara keseluruhan di Hospital Universiti Sains Malaysia (Hospital USM). Satu kajian keratan rentas telah dijalankan dalam kalangan pesakit buah pinggang di Unit Hemodialisis dan wad perubatan Hospital USM. Responden untuk kajian ini dipilih menggunakan kaedah 'purposively' semasa pesakit menjalani rawatan dialisis. Data telah dikumpulkan dalam tempoh satu bulan daripada 15 Februari 2013 hingga 15 Mac 2013 menggunakan satu set soal selidik yang telah disahkan iaitu WHOQOL-BREF (versi Melayu). Data dianalisis menggunakan perisian SPSS versi 12.0. Secara keseluruhan, 50 pesakit buah pinggang terlibat dalam kajian ini (PD, n = 17; HD, n = 33). Peringkat umur, jenis pekerjaan dan pendapatan keluarga serta pendidikan didapati berkait dengan kualiti hidup responden. Kesan sampingan yang paling tinggi untuk pesakit yang menjalani dialisis adalah psikologikal dan persekitaran. Hasil kajian menunjukkan pesakit buah pinggang yang mengalami kesan yang tinggi selepas rawatan dialisis mempunyai skor kualiti hidup yang lebih tinggi. Pesakit

daripada kedua-dua rawatan PD dan HD mempunyai kualiti hidup yang tinggi iaitu 62%. Oleh satu kajian perlu dijalankan pada masa hadapan untuk menilai semula penemuan ini dengan lebih teliti.

CHAPTER 1: INTRODUCTION

1.1 Background of the Study

1.1.1 End Stage Renal Failure

End stage renal failure (ESRF) can be defined as the final stage of renal failure that results in retention of uremic waste products and the need for renal replacement therapies (Smeltzer, Hinkle, Cheever & Bare, 2010). It is a chronic illness that results from a number of pathologic processes, with subsequent physiologic upsets. This happened when the kidneys cannot remove the body's metabolic waste or perform their regulatory function anymore. ESRF is an irreversible and progressive disease and as well as a life-threatening disease (Sayin, Mutluay & Sindel, 2007).

At this stage, ESRF patients will experience irreversible loss of almost total renal function. As renal function declines, the end products of protein metabolism (normally excrete in urine) accumulates in the blood. Following this, uremia develops and adversely affects every system in the body (Smeltzer et al. 2010). The severity of signs and symptoms depends on the degree of renal impairment, other underlying conditions and the patient's age. Some of the common sign and symptoms of ESRF are weakness and fatigue, confusion, seizures, dry skin, thinning hair, hypertension, hyperlipidemia, anaemia, bone and pain (Smeltzer et al. 2010). Some of the assessment and diagnostic findings for ESRF include glomerular filtration rate, sodium and water retention, acidosis, anemia and calcium and phosphorus imbalance (Lewis, Heitkemper & Dirksen, 2004).

Although ESRF is less common than other chronic diseases such as ischemic heart disease, malignant disorders, and chronic obstructive airways disease, it is however, cannot be managed by medication alone. It can also rapidly lead to death unless appropriated treatment is performed. The treatment options for ESRF are life-long, complex, and costly (Mallick and Gokal, 1999). Periodic monitoring and supportive care are required to reduce the degree of illness and to maximize physical function and self-care.

1.1.2 Treatment for ESRF

End stage renal failure (ESRF) refers to a permanent condition in which the kidneys are no longer able to filter waste from the blood. It is generally diagnosed when kidney function drops 10% of normal. At this stage, the wastes build up as the tiny filters in the kidneys (nephrons) continue to lose their filtering ability. In order to avoid life-threatening complications, patients would be asked to go for renal replacement therapy (RRT) besides medication.

1.1.3 Pharmacological Intervention

Medical management is normally offered to patients who refuse for other options (RRT), older patient, have low socioeconomic status and among those with diabetes mellitus in some cases (Morton, Turner, Howard, Snelling and Webster, 2012). It is the treatment of underlying renal pathology and other maneuvers such as medication to prolong residual renal function and help prevent or delay the disease complications. The management includes nutritional therapy, dietary intervention, fluid intake as well and medication. Medications that normally prescribed for ESRF patients include phosphate binding agents, calcium supplements, antihypertensive and cardiac

medications, anti-seizure medications and erythropoietin (Epogen) (Smeltzer et al. 2010) to treat renal anaemia and diuretics to optimize fluid balance. Meanwhile, nutritional therapy and dietary intervention is also necessary with deterioration of renal function. These include careful regulation of protein intake, fluid intake to maintain fluid losses and some restriction of potassium intake. At the same time, adequate caloric intake and vitamin supplement must be ensured (Lewis et al. 2004).

1.1.4 Renal Replacement Therapy (RRT)

The aim of RRT is to prolong patients' QoL by slowing down the disease progress (Sayin et al., 2007). These include dialysis treatment and kidney transplant. For this study however, the researcher will focus mainly on dialysis treatment.

1.1.5 Dialysis Treatment

Dialysis treatment refers to the movement of fluid and molecules across a semi-permeable membrane from one compartment to another. Dialysis is usually initiated when the patient cannot maintain a reasonable lifestyle with medical management alone (Smeltzer et al. 2010). The two most common types of dialysis treatment are peritoneal dialysis (PD) and haemodialysis (HD) (Lewis et al. 2004). The goal of both PD and HD is to remove toxic substances and metabolic wastes and to re-establish normal fluid and electrolyte balance (Smeltzer et al. 2010). Thus, helps to facilitate a better life for the patient.

1.1.4.1 Peritoneal Dialysis (PD)

Peritoneal membrane is defined as the procedure that uses the lining of the patient's peritoneal cavity as the semi-permeable membrane for exchange of fluid and solutes (Smeltzer et al. 2010). Sterile dialysate of concentrated Dextrose fluid is introduced into the peritoneal cavity through an abdominal catheter at intervals. Once sterile solution is in the peritoneal cavity, uremic toxins begin to be cleared from the blood. Diffusion and osmosis occur as waste products move from blood stream to dialysate fluid through the peritoneal membrane (Lewis et al. 2004).

1.1.4.2 Haemodialysis (HD)

Haemodialysis refers to procedure during which a patient's blood is circulated through a dialyzer to remove waste products and excess fluid (Smeltzer et al. 2010). As compared to PD, HD patients however, are requires to undergo the treatment three times a week with the average duration of three to four hours per session. In this treatment, a dialyzer serves as a synthetic semi-permeable that replacing the renal glomeruli and tubules as the filter for the impaired kidneys (Smeltzer et al. 2010).

1.1.6 Quality of Life (QoL)

Quality of life can be a difficult concept to be defined, as it is highly subjective and intricately linked to psychological, physical and social aspects (Tallis, 2005). Patient with ESRF often experience many physical changes which negatively impact their psychological status and interfere their social functioning. Kimmel and Levy (2001) argued that 'dialysis patients lead a highly abnormal life' as they experience many changes on physical, psychological and social functioning that can be attributed by both the disease process and their ability to adapt to such changes. According to

Ogutmen et al. (2006). QOL is one of the important indicators to evaluate the effects of medical treatment. With this concern in mind, the researcher decided to look into ESRF patients' QoL who undergoing dialysis treatment.

1.2 Problem Statement

End stage renal failure (ESRF) is a chronic disease that affects patients' QoL. Many studies have been carried out previously evaluating how dialysis treatment affects ESRF patients' daily life (Mau et al. (2008); Ogutmen et al. (2006); Sayin et al. (2007)). However, these studies were mostly conducted in the Western countries. Such study in Malaysia are limited and the researcher can only found a few published studies related to QoL of ESRF patients in general but none of these studies evaluating QoL of ESRF patients specific on dialysis treatment.

Besides its advantages to help replacing kidney functions, dialysis treatment either PD or HD, are no doubt have some side effects to patients' QoL following treatment. For example in a study by Sayin et al (2007), it was reported that depression and anxiety levels were the significant and negatives effects of PD and HD on ESRF patients' QoL compared to transplant patients (Sayin et al. 2007). While in Unruh et al. (2004), it was indicated that restless leg following dialysis treatment affected 15% of dialysis patients' QoL. Another side effect of dialysis treatment that commonly reported is infection such as peritonitis (Syed, 2006). Clinical signs and symptoms of peritoneal inflammation include pain, discomfort, tenderness, rebound tenderness, fever, nausea/vomiting and diarrhea or constipation (Syed, 2006).

In order to facilitate evaluation on patients' QoL in this study, the researcher decided to use one of the Health related Quality of life questionnaire (HRQoL) by Wilson and Cleary. This model integrates biological and psychological aspects of health status. It identifies and links five levels of dimensions related to HRQoL: (1) biological and physiological factors, (2) symptom status, (3) functional status, (4) general health perception, (5) overall quality of life (Ferrans et al. 2005).

1.3 Research Objectives

1.3.1 General Objective

This study will evaluate quality of life (QoL) of ESRF patients undergoing dialysis treatment (PD and HD) in Hospital Universiti Sains Malaysia (Hospital USM).

1.3.2 Specific Objectives

1. To identify the prevalence of patients undergoing PD and HD in HUSM.
2. To explore the selected demographic data that influence patients' QoL.
3. To assess the impact of dialysis treatment on patients' QoL.
4. To compare QoL between ESRF patients on PD and HD.

1.4 Research Questions

1. What is the number of ESRF patient on PD and HD in Hospital USM in 2012?
2. What are the associate factors that influence the patients' QoL?
3. What is the impact of dialysis treatment on patients' QoL?
4. Is the level of QoL different between patients undergoing PD and HD?

1.5 Research Hypothesis

1. H_0 : There is no significance mean difference between selected demographics data and ESRF patients' QoL.

H_A : There is significance mean difference between selected demographics data and ESRF patients' QoL.

2. H_0 : There is no significance association between impact of dialysis treatment and patients' QoL.

H_A : There is significant association between impact of dialysis treatment and patients' QoL.

3. H_0 : There is no significance difference in quality of life between patients with PD and HD

H_A : There is significance difference in quality of life between patients with PD and HD

1.6 Significance of the Study

The fact about QoL study is a prevailing way to predict an individual's capacity to manage his/her disease and maintain long-term health and well-being (Hornquist, 1990) could be ignored. This indicates the needs to explore QoL issue particularly among ESRF patients undergoing dialysis treatment. This is because ESRF patients have a critical need for health maintenance. Dialysis treatment has been found to affect patients' QoL in other studies. This is particularly referring to psychological status and lack of treatment/illness knowledge (Sayin et al. 2007). Besides the benefit of treatment, patients should be well informed about the consequences or side effects of dialysis treatment to aid decision-making prior to treatment (Partridge and Robertson, 2011).

Although ESRF is acknowledged as one of the life-threatening diseases and had significant effects on patients' QoL, at this stage however, there is no published study found looking at the QoL of ESRF patients' undergoing dialysis treatment in Malaysian population. All of these circumstances has inspires the researcher to explore this issue in a local setting with the intention to compare the QoL between ESRF patients receiving PD and HD. It is hope that this study will add new knowledge, help to improve the care plan of ESRF patients on dialysis treatment and thus, help improve patients' QoL.

1.7 Definition of Terms

Terms	Definition
End stage renal failure	The complete or almost complete failure of the kidneys to work. The kidneys remove waste and excess water from the body. ESRD almost always comes after chronic kidney disease. The kidneys may slowly stop working over 10 - 20 years before end-stage disease results (Zieve and Lin, 2011).
Quality Of Life	An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the persons' physical health, psychological state, level of independence, social relationships and their relationship to salient features of their environment (WHO, 1996).

Peritoneal dialysis

A way to remove waste products from blood when the kidneys can no longer do the job adequately. During peritoneal dialysis, blood vessels in the abdominal lining (peritoneum) fill in for the kidneys, with the help of a fluid (dialysate) that flows into and out of the peritoneal space (Smeltzer et al. 2010).

Haemodialysis

A way to clean blood by using a dialysis machine and a special filter called an artificial kidney, or a dialyzer. To get the blood into the dialyzer, the doctor needs to make an access, or entrance, into blood vessels. This is done with minor surgery, usually to the arm (National Kidney Foundation, 2012).