EFFECT OF HEALTH BELIEFS MODEL BASED PROGRAM FOR PATIENTS UNDERGOING HAEMODIALYSIS ON THEIR QUALITY OF LIFE

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Abstract:

Hemodialysis is a physically stressful procedure and most of the elderly patients will have fatigue. Fatigue is a common and debilitating symptom, affecting 42–89% of end-stage kidney disease patients. It is a complex, multidimensional, and multifactorial phenomenon with huge repercussions on functioning, quality of life and elderly patient outcomes. **Aim:** determine the relationship between fatigue and functional status of the elderly patients on hemodialysis. **Method**: A descriptive co-relational design was used. Setting: This study was carried out at the hemodialysis unit at New Mansoura General Hospital in Mansoura city affiliated to the Ministry of Health. **Tools**: Data was collected using 4 tools, Tool I : Structured interview questionnaire sheet, Tool II: Katz and Akpom scale , Tool III: Lawton and Brady scale, Tool IV: Multidimensional Fatigue Inventory Scale (MFI-20).**Results**: the study revealed that about half of the studied elderly (51.8%) have high level of fatigue and there is a significant correlation between fatigue and the functional status of the elderly patients on hemodialysis. **Conclusion & recommendation:** The frequency of fatigue is high among hemodialysis patients. Fatigue has an effect on the functional status of hemodialysis elderly patients. Development & Implementation of Health educational programs for newly elders on hemodialysis about hemodialysis process and fatigue and its management.

*Key words***:** Fatigue, Functional status, Elderly, Hemodialysis.

Introduction:

The health belief model is a psychological health behavior change model developed to explain and predict health-related behaviors, particularly in regard to the uptake of health services. The health belief model suggests that people's beliefs about health problems, perceived benefits of action and barriers to action, and self-efficacy explain engagement (or lack of engagement) in health-promoting behavior. A stimulus, or cue to action, must also be present in order to trigger the health-promoting behavior [1]. Components of health beliefs models are perceived severity Refers to subjective assessment of the severity of a problem of health and its potential consequences, perceived susceptibility refers to subjective assessment of risk of developing a health problem. The health belief model predicts that individuals who perceive that they are susceptible to a particular health problem will engage in behaviors to reduce their risk of developing the health problem, perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health-promoting behavior to decrease risk of disease, perceived barriers refer to an person's assessment of the obstacles to

behavior change, a cue, or trigger, is necessary for prompting engagement in health-promoting behaviors, and self-efficacy refers to an individual's perception of his or her competence to successfully perform a behavior [2]. Health Belief Model (HBM) that considers behavior as a function of one's data and perspective, and in step with its elements it's designed supported the thought of inflicting awareness of a health threat in individuals to guide their behavior towards health. This model will increase patients' data perceived susceptibleness and severity regarding the sickness and considering the perceived edges and barriers and cues to action, lead the individual toward health-centered behavior. In step with this model, the individual adopts health-improving behaviors [3]. Quality of life (QOL) is the general well-being of individuals and societies. QOL has a wide range of contexts, including the fields of international development, healthcare, politics and employment. When we look at health related quality of life (HRQOL) we in impact examine QOL and its relationship with health. HRQoL is the psychological, physical, and social domains of health that square measure distinctive to every individual. The financial gain, freedom, and also the atmosphere are different valued aspects of life exist that aren't typically including "health. Every of those domains will be measured by the target assessments of health or functioning standing and also the subjective perceptions of health. It's been outlined as follows: "HRQoL is outlined because the price appointed to length of life as changed by impairments, purposeful states, perceptions, and social opportunities that are influenced by sickness, injury, policy, or treatment [4]. Some authors believe that the detection of systems of health beliefs help health professionals take a proper care plan,

which covers various beliefs. Regarding the value of health beliefs, the authors argue that in order to strengthen preventive behaviors, besides being aware of the behaviors, the patient should believe that preventive behavior has maintained his/her health and protected him/her against disease consequences, hence encouraging them to show appropriate behaviors [5]. Nursing care in this context is to help patients deal with their situational derived needs. The goal of which, is to reduce disability and control dependency. The nurse role as information giver is a very important one. Patients on dialysis present a problem. Information must be given simply and patiently repeated. The nurse plays a critical role in providing information, support, understanding and therapeutic counseling to the patient and his family throughout the entire illness. The nursing care must be provided in order to avoid the complications of reducing renal function and the stresses and anxieties of dealing with a life threatening illness [6].

Significance of the study

It has been observed over a period of five years' experience in renal dialysis unit that patients, with chronic renal failure and undergoing hemodilaysis got some physical, psychological and social problems, the patient must be learned and must be adapted with his illness. It is very important for the patient to know causes of his disease, risk factors and patients' self-care. Chronic kidney disease is a worldwide public health problem and the prevalence of chronic renal failure during one year 2012 per million population in some countries was: Arabian Peninsula was 70-110, East Asia was 80-100, North Africa was 120-170, south America was 120-160, North America was 160-170, and in Egypt was 300. This report from World Health Organization in December 2013 [7]. This is in light of the findings

documented by Lindberg (2010) [8], Effective management of excessive fluid overload in haemodialysis patients is dependent on the recognition that the patient is the main manager. Frequent and repeated contacts with renal nurses can help these patients develop problem-solving skills, set goals, and understand their progress in managing multiple aspects of their disease. As well, Farrokhi (2013) [9] demonstrate that nursing support is critical to help patients develop proficiency in performing certain skills and tasks. Individualization of the common educational approach by incorporating the patient's beliefs, behaviors, and emotional and physical feelings as well as culture, economic situation, ability and knowledge of the disease and its treatment supports self-management. So the researcher pretends to conduct this study, to evaluate the effect of HB M based program for promoting healthy behaviors among the patients undergoing HD on their QoL.

Aims of study:

The present study aimed to Investigate the effect of the health belief Model (HBM) based program on quality of life of haemodialysis patients.

Research hypothesis

To fulfill the aim of the study, the following research hypotheses was formulated: The health belief Model (HBM) based program will improve health related behavior, knowledge and quality of life for patients undergoing haemodialysis

Subjects and Method:
Study Design:

A quasi-experimental design was used in this study.

Setting:

The study was conducted in artificial kidney Unit of Benha University Hospital.

Subjects:

A purposive sample of all adult patients, admitted through a period of 6 months, at previously mentioned above setting and diagnosed with chronic renal failure and undergoing haemodialysis, the actual number of patients under study was 147 drop out of a few number the sample (5 patients), and fulfilling the following criteria:

Inclusion criteria:

- Their age ranged between 20 – 60 years old.
- Able to communicate.

Exclusion criteria:

- Mentally retarded.
- Unconscious patients.
- Cancer patients
- Congestive heart failure
- Chronic obstructive pulmonary disease

Tools:

1. Assessment form which consists of two parts:
   a) Socio-demographic data
   b) Knowledge assessment
2. Health behavior form for haemodailysis patients it was assessed healthy patients perceptions and attitudes toward disease and management.
3. Quality of life (QOL) scale was used to determine the level of QOL for dialysis patients.
4. Laboratory investigation

Health beliefs model based program it is a program for such group of patients tailored or designed for haemodialysis patients focusing on the healthy behaviors of improving their quality of life, knowledge, and laboratory investigation.

Field work:

To carry out the study, ethical approval was obtained from the Official letters were issued to hospital director and nursing director of Benha University Hospital from the faculty of nursing explaining the aim of the study to obtain permission for the collection of data. Data was collected

in the following manner: the researcher visited the unit in morning, after-noon, and evening shift for three to five days/week. The aim of the study and component of the tools were explained to patients under study at the beginning collection of data. The researcher filled the data collection tools within 60-90 minutes each tool take about 20 minutes (sometimes filled into 2 days for the same patient). Only two to three patients were met every visit. Patient's socio-demographic characteristics and medical data, patients knowledge, health related behavior, quality of life, and laboratory investigation, were filled pre and after health beliefs model based program implementation. Implementation of health beliefs model based program is done in the following manner: Each patient was interviewed separately by the researcher within the patient's room. The sessions number is 15 sessions in keeping with patient's needs; every session lasted from 60-90 minutes. Every patient should be invited to return to the researcher whenever he/she wishes, for any reason through telephone contact. Implementation of health beliefs model based program lasted over period of 3 months. It was done for developing health beliefs for patients with renal failure. This was conducted through four phases: perceived threat, perceived benefits, implementation and evaluation.

Validity and reliability:
- The tools were revised for content validity to determine whether the tool covers the aim. The tools revised by (7) expertise in that field- validity Professor, assistant professor, and lecturer (Ain Shams University 2 professor and 1 assistant professor , El-Mansoura University 1 assistant professor and 1 lecturer , El-Menia University 1 assistant professor, and Benha University 1 lecturer). Reliability of knowledge questionnaire was (0.78). Reliability of health

behavior questionnaire to avoid infection was(0.86), health behavior to avoid urinary tract infection was (0.79), health behavior about nutrition for haemodailysis was (0.83), health behavior to avoid renal failure complication was (0.79), health behavior to Skin care was (0.94), health behavior to fistula care was (0.92), health behavior for medication regimen was (0.83), health behavior to improve activity and body condition was (0.79), health behavior for follow up program was (0.84), health behavior to avoid stress was (0.81), health behavior for marriage relationship was (0.93), health behavior to improve Social relationship was (0.98), health behavior to improve Spiritual condition was (0.95), health behavior to improve Emotional condition was (0.86). Reliability of Quality of life (QOL) scale related physical condition was (0.86),reliability of Psychosocial condition was (0.94), reliability of social condition was (0.87), reliability of spiritual condition was (0.79),and reliability of activity of daily living was (0.89). Tool reliability was done using cronbach's alpha test

Pilot study:
> The pilot study was carried out 10% from the total sample in order to evaluate the feasibility and applicability of tools and to estimate the proper time required for answering the questions. The tool was modified based on the results of the pilot study and the opinion of experts.

Ethical consideration:
Before carry out of the study, moral approval was obtained from the Scientific Research moral Committee at faculty of nursing in Mansoura University. Additionally, oral consent was obtained from every participant. Patients were

assured that anonymity and confidentiality would be guaranteed and that they have the right to withdraw from the study at any time without giving any reason.

Statistical design:

Up on completion of data collection were organized, categorized, tabulated and statistically analyzed. Data analyzed by using the statistical Package for Social Science (SPSS) version 15, to evaluate the change in patients under the study (pre-and post health beliefs model based program implementation). Data were presented in tables and charts using numbers and percentages. The statistical analysis included percentage (%), mean, standard deviation (SD), range, Chi-square (X2), Z-test and Pearson coefficient (r). The observed differences, and associations were considered statistically significant $P < 0.05$.

Results:

Table 1: Demonstrates the mean score of patients knowledge regarding general knowledge about renal failure pre-and post intervention, it was indicated that there was a highly statistical significant ($P < 0.001$).

Table (1): The mean score of patients knowledge regarding general knowledge about renal failure pre-and post-intervention Knowledge assessment (N=142).

Item	Pre-program Mean ±SD	Post-program Mean ±SD	Paired t test	P value
Kidney function	.7394±.84786	2.3944±.69402	-17.748	<0.001**
Risks for renal failure	.8662±.81848	2.3521±.68621	-16.755	<0.001**
Causes of renal failure	1.2606±2.86747	2.4577±.66974	-4.810	<0.001**
Symptom of kidney failure	.7887±.84912	2.4437±.69979	-17.748	<0.001**
The treatment of chronic renal failure	.8592±.93469	2.3803±.74121	-14.733	<0.001**
Complication of renal failure	.6761±.67948	2.3944±.69402	-21.265	<0.001**

Table 2: illustrates the mean score of patients knowledge regarding the care of renal failure pre-and post intervention, it was indicated that there was a highly statistical significant difference (P<0.001) .

Table (2): The mean score of patients knowledge regarding the care of renal failure pre-and post-intervention (N=142).

| Item	Pre-program Mean ±SD	Post-program Mean ±SD	Paired t test	P value
Definition of hemodialysis	.8592±.85545	2.2887±.76799	-14.347	<0.001**
Precaution during hemodialysis	1.0000±.94531	2.2746±.76394	-11.885	<0.001**
Side effects of hemodialysis	1.2606±1.18907	2.4577±.66974	-10.225	<0.001**
Nutritional intake of patients with renal failure	.8873±.91558	2.3944±.69402	-15.917	<0.001**
Fluid intake of patients with renal failure	.8944±.85641	2.2324±.75948	-13.601	<0.001**
Skin care	.5704±.80246	2.4718±.70150	-19.909	<0.001**
Fistula care	.5141±.79659	2.4718±.67049	-23.776	<0.001**
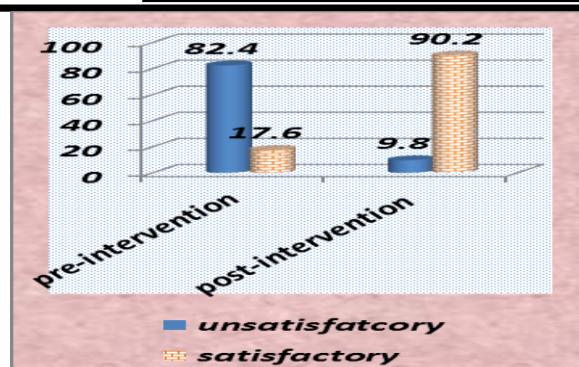
Figure (1): percentage distribution of total knowledge of studied patients

This figure illustrates the mean score of patients knowledge regarding the care of renal failure pre-and post-intervention, it was indicated that there was a highly statistical significant difference (P<0.001) .

Table (3):Distribution of total score for healthy behaviors related main aspects among the studied patients pre and post intervention, it was showed that there was a highly statistical significant difference (P<0.001).

Table (3): Distribution of total score for healthy behaviors related main aspects among the studied patients pre and post intervention (N=142).

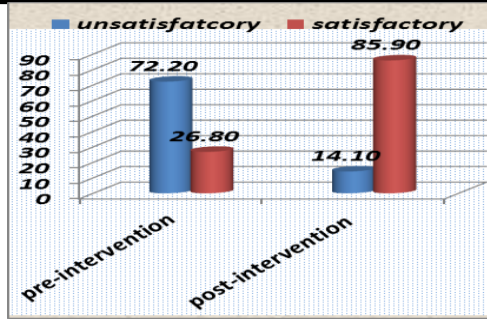| Health behavior related parts	Pre-intervention				Post-intervention				Chi square test	P value
	Unsatisfactory <75%		Satisfactory ≥ 75%		Un-satisfactory <75%		Satisfactory ≥ 75%			
	No	%	No	%	No	%	No	%		
Avoid infection	102	71.8	40	28.2	16	11.3	126	88.7	107.23	<0.001**
Avoid urinary tract infection	107	75.4	35	24.6	19	13.4	123	86.6	110.47	<0.001**
Healthy nutrition for hemodialysis	105	73.9	37	26.1	23	16.2	119	83.8	95.63	<0.001**
Avoid renal failure complication	101	71.1	41	28.9	22	15.5	120	84.5	89.50	<0.001**
Avoid haemodialysis complication	106	74.6	36	25.4	21	14.8	121	85.2	102.90	<0.001**
Skin care	107	75.4	35	24.6	19	13.4	123	86.6	110.47	<0.001**
Fistula care	110	77.5	32	22.5	20	14.1	122	85.9	114.90	<0.001**
Follow medication regimen	102	71.8	40	28.2	25	17.6	117	82.4	84.44	<0.001**
improving activity and body condition	111	78.2	31	21.8	20	14.1	122	85.9	117.33	<0.001**
follow up care	102	71.8	40	28.2	28	19.7	114	80.3	77.68	<0.001**
Avoid stress	110	77.5	32	22.5	24	16.9	118	83.1	104.50	<0.001**
Marriage relationship	113	79.6	29	20.4	23	16.2	119	83.8	114.28	<0.001**
improving Social relationship	109	76.8	33	23.2	18	12.7	124	87.3	117.95	<0.001**
improving Spiritual condition	113	79.6	29	20.4	24	16.9	118	83.1	111.70	<0.001**
improving Emotional condition	111	78.2	31	21.8	18	12.7	124	87.3	122.84	<0.001**
Total health behavior score	104	73.2	38	26.8	20	14.1	122	85.9	101.00	<0.001**

Figure (2): percentage distribution of total health behavior score of studied patients regarding renal failure pre and post intervention.

This figure reveled that, distribution of total score for healthy behaviors related main aspects among the studied patients pre and post intervention, it was showed that there was a highly statistical significant difference (P<0.001).

Table (4): Shows the distribution of total quality of life domains scores of the studied patients pre and post intervention, it was showed that there was highly statistical significant difference (P<0.001).

Table (4): Distribution of total quality of life domains scores of the studied patients pre and post intervention (N=142).

| Item	Pre-intervention				Post-intervention				Chi square test	P value
	Unsatisfactory <60%		Satisfactory ≥60%		Unsatisfactory <60%		Satisfactory ≥60%			
	No	%	No	%	No	%	No	%		
Physical condition	107	75.4	35	24.6	14	9.9	128	90.1	124.54	<0.001**
Psychological condition	119	83.8	23	16.2	16	11.3	126	88.7	149.78	<0.001**
Social condition	116	81.7	26	18.3	19	13.4	123	86.6	109.09	<0.001**
Spiritual condition	111	78.2	31	21.8	19	13.4	123	86.6	120.69	<0.001**
Activity of daily living	104	73.2	38	26.8	15	10.6	127	89.4	114.56	<0.001**
Total quality of life score	111	78.2	31	21.8	18	12.7	124	87.3	122.48	<0.001**
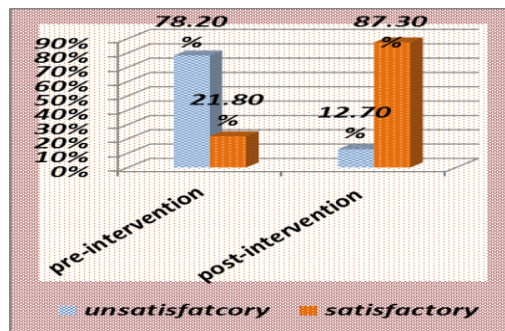
Figure (3): percentage distribution of total quality of life score of studied patients pre and post intervention.

This figure shows the distribution of total quality of life domains scores of the studied patients pre and post intervention, it was showed that there was highly statistical significant difference (P<0.001).

Table (5): The mean score of laboratory investigation values of the studied patients pre and post intervention (N=142).

	Pre-intervention Mean ±SD	Post-intervention Mean ±SD	Paired t test	P value
Urea	123.0493±65.26100	79.1479±45.99722	15.877	<0.001**
Creatinine	8.1401±3.78755	4.1232±2.33881	15.987	<0.001**
Calcium	9.0120±1.85658	4.8549±2.05918	25.351	<0.001**
Phosphorus	5.6246±1.91690	2.8913±1.32205	19.807	<0.001**
Sodium	165.0423±14.09133	123.8331±31.59333	13.176	<0.001**
Potassium	5.7838±1.06035	3.3613±1.29049	17.938	<0.001**

Table (5): Illustrates the mean score of laboratory investigation of the studied patient pre and post intervention, it was pointed out that that there was highly statistical significant difference (P<0.001).

Table (6): correlation between the studied patients total knowledge, quality of life, and healthy behaviors total score at the post intervention phase (N=142).

		Total quality score	Total behavior score	Total knowledge score
Total quality score	Pearson Correlation	1	.544**	128
	Sig. (2-tailed)		.000	.128
Total behavior score	Pearson Correlation	.544**	1	.121
	Sig. (2-tailed)	.000		.150
Total knowledge score	Pearson Correlation	.128	.121	1
	Sig. (2-tailed)	.128	.150	

Table (6): illustrates correlation between the studied patients total knowledge, quality of life, and healthy behaviors total score at the post intervention phase, it was revealed that there was a positive association (P<0.001).

Discussion:

The current study result revealed that demonstrate mean score of patient knowledge regarding general knowledge about renal failure pre and post intervention, it was indicated that there was a highly statistical significant difference between general renal failure knowledge mean score at the pre and post intervention phases of the program. This finding agreed with Kazley, Johnson, Simpson, Chavin, and Baliga (2014) [10], who found that, Knowledge is fundamentally important to clinicians caring for patients with kidney diseases.

As regards patients' knowledge regarding care of renal failure pre and post intervention, it was indicated that there was a highly statistical significant difference between care of renal failure knowledge mean score at the pre and post intervention phases of the program. The present study result also indicated that 3quarters of patients had satisfactory data after health beliefs model based program. This is similar to Teera, luz, Songyot, Tangsa, Chaivat, Tritasavit, Inthria, and

Tantivess (2016) [11], who stated that, patients with hemodialysis due to their specific culture and environment, want special and steady education so as to adapt to physical and mental disabilities. Though adherence of special diet by patients is supplements to dialysis and is suggested for effectively mangment signs and symptoms of uremic syndrome associated with long term prevention of disease. This finding was parallel with Esmaili, Majlessi, Montazeri, Sadeghi, Nedjat, and Zeinali (2016) [12], who expressed that, patients who received education had increased improvement of knowledge.

In the present study reported that, there was a highly statistically significant difference among the study group pre/post health beliefs model based program implementation regarding to health behavior. This finding may be resulting to the knowledge and skills patients acquired from the health beliefs model based program. The study result also indicated that two third of patients had satisfactory health behavior after health beliefs model based program. This is similar to Abo Deif, Elsawi, Selim, and Nasr Allah (2015) [13], who stated that, to improve hemodialysis patient condition must be enhancing positive attitudes among patients and their perceptions of behavioral management. Therefore, it is necessary to provide hemodialysis patients with education to improve and modify their health awareness and attitude.

In the present study, there were statistically significant differences among the study group between before and after implementation of the health beliefs model based program in relation to QOL. This difference in QOL found among the studied group might be related to the health beliefs model based program application, patients after health beliefs model based program became more knowledgeable and had skills to avoid and manage complications and side effects.

This was supported by Joshi (2014) [14], who stated that, the quality of life has a significant correlation with health locus of control beliefs. Therefore, it is necessary to provide hemodialysis patients with education to improve and modify their health awareness and attitude.

The present study indicated that laboratory investigation of the studied patient pre and post intervention, it was pointed out that there was highly statistical significant difference between studied patient laboratory investigation values at the pre and post intervention phases of the program. This finding was supported by Mohmoud et al (2015) [15], revealed that the low QoL levels contribute to socio-demographic profile and medical-clinical and laboratory characteristics of hemodialysis patients. Similarly Guerrero et al (2012) [16], reported that health education, dietary modifications, and medications tends to be enhance laboratory investigation. On the same line, Ahrari et al (2014) [17], concluded that, lifestyle restrictions can impact on patients' illness beliefs, laboratory investigation, sense of perso nal control leading to anxiety and depression, inhibiting coping, and adjustment patients with a way of confidence in their ability to perform self-care behaviors are more probably to actual perform these tasks. so, people with high levels of self-care are ready to manage their end stage of renal disease (ESRD).

In this study revealed that there were highly positive statistically significant correlations between studied patient total knowledge, quality of life, and behavior total score at the post intervention phase. This finding clarified that when patients' level of knowledge and performance promoted, their self-care also promoted. Onoruoiza et al (2015) [3] reported that health Beliefs Model is important guides for understanding Noncompliance to disease information.

Similarly, Clarke et al (2016) [18], reported that their relationship between health information and quality of life. This is similar to Teera, et al, (2016) [11], who stated that, patients with hemodialysis resulting to their culture and specific environment, need special and steady education in order to adapt to mental and physical abnormalities. though adherence of special diet by patients is supplements to hemodialysis and is importuned for effectively control symptoms and signs of uremic syndrome associated with long-term prevention of disease.

Conclusion:

The present study concludes that health belief Model (HBM) based program has statistically significant positive effect on health behavior, knowledge, quality of life, and laboratory investigation for patients undergoing haemodialysis. So the present study revealed that there were statistically significant positive correlations between studied patient total knowledge, quality of life, and health behavior total score at the post intervention phase.

Recommendation:

Based upon the findings of the study, the following recommendations are suggested:

- Application of health beliefs model program is important for the dialysis patient, they establishment of patients' educational centers in hospitals equipped by suitable related materials, medias and audio-visual aids for teaching all hemodialysis patients how to adhere to a prescribed regimen.
- Health beliefs model based program and counseling should begin pre-dialysis to help patients undergoing hemodialysis identify existing coping strategies and to develop new ones.

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