



EFFECTIVENESS OF PRE-HAEMODIALYSIS PREPARATORY PROGRAM IN REDUCING ANXIETY AND DEPRESSION OF CHRONIC KIDNEY DISEASE PATIENTS.

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ABSTRACT The study used a quasi-experimental design. Subjects comprised of 100 adult patients with stage 3 and stage 4 chronic kidney disease patients. Patients in intervention group received pre-haemodialysis preparatory program and those in control received standard care. Post assessment for anxiety and depression was carried out two weeks after the delivery of intervention. The intervention was found to be significantly effective in reducing depression ($F(1, 95) = 20.295, P = 0.000$). However the intervention was not found to be significant in reducing anxiety ($P = 0.07$). The program helped patients to positively reappraise their life goals and encouraged them to take control over their own lives.

KEYWORDS : Depression, Anxiety, Pre-haemodialysis preparatory program, chronic kidney disease

INTRODUCTION:

In India 61-66% patients present to the nephrologists are already in End stage renal disease (ESRD). These patients are not adequately prepared to understand their disease and enable them to manage it to best of their abilities⁽¹⁾. Depression and anxiety are the primary psychiatric problems of ESRD patients^(2,3,4). Prevention and early identification and management of anxiety and depression is essential in this patient population. This study was undertaken to assess the effectiveness of nurse led education cum counselling program on depression and anxiety among stage 3 and stage 4 CKD patients.

MATERIALS AND METHODS:

Design and setting

The study used a quasi-experimental design (non-equivalent control group pre- test-post- test design). Population comprised of stage 3 and stage 4 chronic kidney disease patients who had selected haemodialysis as a treatment option. The study included 100 adult patients (20-60years). Sample size was computed based on power analysis, keeping the power of study at 80% ($P < 0.05$ two tailed). The study was carried out at a tertiary care hospital in Bangalore.

Intervention

The intervention consisted of a pre-haemodialysis preparatory program, which was prepared by the researcher based on the findings of qualitative study conducted previously. Transactional model of stress and coping which is based on psychological stress theory of Lazarus was used as guiding framework to develop the intervention. The program consisted of three sessions namely, 'chronic kidney disease and its conservative management', 'understanding haemodialysis as treatment option', and 'coping with disease and haemodialysis treatment'.

Instrument

Beck anxiety inventory (BAI) and beck depression inventory II (BDI-II) were used to measure anxiety and depression respectively. Both BAI and BDI-II are self-report instruments. Both the tools were translated in local language and reliability for translated versions was computed using cronbach α (BAI $\alpha = 0.92$; BDI-II $\alpha = 0.92$).

Data collection procedure

Patients who met inclusion criteria in the selected hospital units were recruited for the study using consecutive sampling technique. Informed consent was obtained from all the subjects. Patients admitted in the experimental units received pre-haemodialysis preparatory program and those in the control units received standard care. This helped in avoiding contamination of control group. Pre-assessment of anxiety and depression, was carried out for patients in both groups by administering Beck anxiety inventory (BAI) and beck depression inventory-II (BDI-II). The pre-haemodialysis preparatory program was delivered individually to each subject in three sessions each lasting for duration of 30-45minutes on three consecutive days. Power point presentation with simple pictures and illustrations was used as a teaching aid. Patients were encouraged to discuss specific issues encountered by them during the program. Patients were given an information booklet at the end of the program. Post-assessment of dependent variables was carried out for patients in both the groups

after two weeks.

RESULTS:

SPSS Statistics (Version 20) was used for data analysis. Majority of the subjects from both the groups (68% in experimental and 70% in control group) were males. Mean age of the sample was 50.08 years in the experimental and 45.26years in the control group. Most subjects had stopped working due to their illness (16% in experimental and 24%in control group) Majority of the subjects (34%in experimental and 36%in control group) had pre-existing diabetes mellitus and hypertension. The mean annual income was INR 2 lakhs for subjects in both the groups. More than half the subjects from both the groups did not have medical insurance (54% in experimental and 66% in control group). Analysis revealed that the subjects in both the groups demonstrated similarity with regards to their socio-demographic variables except for age ($P = 0.049$) education, ($P = 0.036$) and annual income ($P = 0.015$).

Most patients had mild to moderate anxiety (85%) prior to implementation of intervention. Moderate to severe depression existed in 53% of the patients. Prior to intervention subjects in experimental and control group did not differ significantly with regards to anxiety ($P = 0.189$) and depression ($P = 0.154$). After the implementation of pre-haemodialysis preparatory program, highly significant improvement with moderate to large effect size was observed in patients 'receiving pre-haemodialysis preparatory program with relation to anxiety ($P = 0.002$) as well as depression ($P = .000$) (Table no-1). As the subjects in the experimental group and the control group differed significantly with regards to their age ($P = 0.049$) education ($P = 0.036$), and annual income ($P = 0.015$), ANCOVA was computed after controlling for confounding socio-demographic variables. The intervention was found to be significantly effective in improving depression ($F(1, 95) = 20.295, P = 0.000$). However the intervention was not found to be significant in improving anxiety ($P = 0.07$). (Table no- 2)

Anxiety had weak positive correlation with depression ($r = 0.442, P = 0.01$). Anxiety levels had weak negative correlation with years of education ($r = -0.261, P = 0.01$) and annual income ($r = -0.358, P = 0.01$). Depression scores also had weak negative correlation with years of education ($r = -0.290, P = 0.01$) and annual income ($r = -0.223, P = 0.05$).

DISCUSSION:

The mean age of chronic kidney disease patients in this study was much lower than their western counterparts (50.08 years in the experimental and 45.26 years in the control group). Diabetes mellitus and hypertension are the major reported causes of chronic kidney disease in India. In the present study population too it can be observed that majority of the subjects (34% in experimental and 36% in control group) had pre-existing diabetes mellitus and hypertension. This clearly points out to the need for early screening of diabetic and hypertensive patients for renal impairment. Good control of blood sugars and blood pressure can help to prevent damage to kidneys among these patients'. Nurses can play key role in educating these patients. Findings of this study also show that most patients' had stopped working due to their illness (16% in the experimental and 24% in the control group). Dialysis treatment is both money and time

expensive. In the absence of social security in India, Patients are burdened to bear their treatment expenses out of their pockets. More than half of the patients in this study did not have any kind of medical insurance. Loss of employment and financial burden of dialysis treatment often leads to pronounced psychological stress among these patients.

Finding of the present study are close to findings reported in published literature that show prevalence of anxiety ranging between 27%-64% among haemodialysis patients' (5,6,7,8). Uncertainty regarding the future and fear of losing control in life are important factors associated with anxiety that adversely affect emotional stability (9). Most patients in this study seemed to have inadequate information about the disease and haemodialysis treatment. This probably created a fear of unknown and feelings of uncertainty among them leading to experience anxiety. Financial burden of treatment also seems to be huge concern that created anxiety among these patients. When a patient needs maintenance haemodialysis therapy, level of physical, mental, social and financial stress may increase significantly, leading to an increased chance of depression in this group of patients. On the other hand, if the patient is the sole barer of the family, the fear of losing job, worsened financial difficulties, dependency on other family members for treatment and daily domestic expenses can exacerbate his/her depression. In the present study overall 26% subjects were found to

have severe depression and 27% had moderate depression assessed on Beck depression inventory-II (BDI-II). Results of the present study are close to the results reported by Patel et.al. Their study used DSM IV as an instrument with a larger sample size of the 150 subjects. Findings of the study reported that 33.3% subjects fulfilled DSM-IV criteria for a major depressive disorder (10). Chronic nature of the disease, need for lifelong treatment, perceptions of loss and lack of control, and altered family and social relationships seem to be important reasons for depression among these patients. Loss of employment and subsequent financial crisis probably plays great role among young Indian patients developing depression.

The program seemed to help patient to positively reappraise their life goals and encouraged them to take control over their own lives by actively participating in decision making in all aspects of their lives. Patients' felt that program motivated them to take charge of their lives and gave them an insight that leading a near normal life is possible. It is recommended that an on-going patient education and counselling program led by trained nurse educator should be initiated at nephrology outpatient clinic and dialysis units of tertiary care hospitals. Nurses working in hospitals and community should emphasize on patient education on prevention and early identification of chronic kidney disease especially for patients with diabetes mellitus and/or hypertension.

Table No 1: Comparison of mean pre and post-test scores of experimental and control group for anxiety, depression.

n=100

Variables	Pre Test		P Value Pre-test Experimental Group vs. Pre-test Control Group	Post Test		P Value Post-test Experimental Group vs. Post-test Control Group
	Mean Rank	Inter Quartile range		Mean Rank	Inter Quartile range	
Anxiety						
Experimental	46.69	15.00	U=1059.500 Z=-1.314 P=0.189 r=-0.1314	41.38	19.50	U=794.000 Z=-3.147 P=0.002** r=-0.3147
Control	54.31	19.50		59.62	13.25	
Depression						
Experimental	47.44	15.25	t= -1.436 P=0.154 d=0.29	37.66	21.75	U=608.000 Z=-4.428 P=.000*** r=-0.4428
Control	53.56	15.50		63.34	21.25	

P<0.01; *P<0.001

Table No 2: Effect of pre-haemodialysis preparatory program on anxiety and depression after controlling for age education and annual income

n=100

Effect of intervention on	Test of Significance	Partial Eta Squared
Anxiety	F(1,95)=7.663 P=0.07	0.075
Depression	F(1,95)=20.295 P=0.000***	0.176

***P<0.001

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