A Study to Develop and evaluate effectiveness of pre-haemodialysis preparatory program based on identified stressors on anxiety, depression, coping strategies and compliance to therapeutic regimen among chronic kidney disease patients in selected hospitals in Bangalore

Ms. Jadhav Sonali Tarachand

ABSTRACT

Background

Chronic kidney disease patients are reported to have several psychological problems. Anxiety and depression are the most common psychological problems reported among these patients. Anxiety and depression can prevent patients from taking the immediate and appropriate steps to best address their disease. As a result they may miss opportunity to stabilize and or maintain their health, prolong their need for dialysis, and properly prepare for the time that they will need dialysis.

In India the research evidence on effectiveness of organised pre-dialysis program is very scant. At present it is the responsibility of the treating nephrologist to provide disease and treatment related information to these patients. The numbers of nephrologist available in country are inadequate to spend time for education and counselling of patient considering the rising burden of chronic kidney disease (CKD). Almost 50 per cent of patients in India present with end stage renal disease (ESRD) as the initial presentation of renal disease. Such patients need to be immediately initiated on haemodialysis. The psychological stress of diagnosis of chronic disease and initiation of haemodialysis therapy is overwhelming for these patients.

The present study was intended to develop a pre-haemodialysis preparatory program based on assessment of stressors experienced by Indian patients on initiation of haemodialysis treatment. In the second phase of study researcher evaluated the effectiveness of this program
on anxiety, depression, coping, and compliance to therapeutic regimen among stage 3 and stage 4 CKD patients who need to be initiated on haemodialysis.

**Methods**

The study used a mixed methods research approach. In the first part of the study qualitative approach was used to identify stressors experienced by patients on initiation of haemodialysis treatment. Based on findings of this part of the study a pre-haemodialysis preparatory program was designed. In the second part of study a quantitative approach was employed to evaluate the effectiveness of this program on anxiety, depression, coping, and compliance to therapeutic regimen among stage 3 and stage 4 chronic kidney disease patients who need to be initiated on haemodialysis.

Based on data saturation a purposive sample of 10 patients on haemodialysis treatment was selected for the qualitative study. Interviews with participants were conducted using an interview guide. All interviews were audio-taped and transcribed verbatim. The interpretive content analysis of the text was undertaken for the purpose of analysing qualitative data. After reading and rereading through the transcribed interviews major categories and themes appearing in the data were identified. Data analysis continued until no further themes emerged and all relevant text was coded. Analysis of the data resulted in the emergence of three main categories—‘Physical stressors, ‘psychological stressors’ and ‘socioeconomic stressors’.

Based on the findings of the qualitative analysis a pre-haemodialysis preparatory program was designed. 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’. The program was validated by five experts from relevant nursing, medical and nutrition experts.
In the second part of the study effectiveness of pre-haemodialysis preparatory program was assessed using quasi-experimental design (non-equivalent control group pre- test-post- test design). Population for this part of study comprised of stage 3 and stage 4 chronic kidney disease patients who have selected haemodialysis as a treatment option and are being treated at M.S. Ramaiah hospital Bangalore. The independent variable of this study was implementation of pre-haemodialysis programme. The dependent variables were anxiety, depression, coping and compliance to therapeutic regimen. Beck Anxiety Inventory and Beck Depression Inventory-II were used to assess anxiety and depression respectively. Carver’s Brief Cope Scale was used to assess coping strategies. Compliance scale developed by the researcher was used to assess patients’ compliance to therapeutic regimen. After establishing validity and reliability of research instruments, patients who met inclusion criteria were recruited for the study using consecutive sampling technique. Hospital wards were randomly assigned as experimental and control wards at the beginning of the study. Patients admitted in the experimental wards received pre-haemodialysis preparatory program and those in the control wards received routine care. Sample size for this study consisted of 50 subjects each in experimental and control group. Post assessment of the dependent variables was carried out for the subjects in both the groups after two weeks. Data were analysed through the suitable descriptive and inferential statistics.

**Results**

Analysis of qualitative data resulted in the emergence of three main themes—‘Physical stressors, ‘psychological stressors’ and ‘socioeconomic stressors’. Physical stressors reported by patients included, pain, tiredness, loss of appetite, itching, swelling, and muscle cramps. Psychological stressors included, shock, depression, uncertainty about life, fear of complications, compliance to therapeutic regimen, and feeling of being burden on family. Loss of employment, financial problems, limited social life, and loss of normalcy in life were the socioeconomic stressors.
Findings of quantitative study assessing effectiveness of pre-haemodialysis program on anxiety, depression, coping and compliance to therapeutic regimen revealed that 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 ($P=0.002, r=-0.3147$), depression ($P=0.000, r=-0.4428$), adaptive coping ($P=0.001, r=-0.3229$), and compliance ($P=0.000, \text{abs}(r)=-0.5834$) as compared to those receiving standard care.

Significant correlation was found between the baseline levels of anxiety, depression, coping and compliance to therapeutic regimen. Anxiety levels had strong negative correlation with compliance ($r=-0.301, P=0.01$). Anxiety also had positive correlation with use of maladaptive coping strategies ($r=0.240, P=0.05$) and depression ($r=0.442, P=0.01$). Depression scores had negative correlation with compliance ($r=-0.419, P=0.01$). Depression had significant positive correlation with use of maladaptive coping strategies ($r=0.303, P=0.01$) and anxiety ($r=0.442, P=0.01$). Use of maladaptive coping strategies was positively correlated with anxiety ($r=0.240, P=0.05$) and depression ($r=0.303, P=0.01$). Compliance was negatively correlated with use of maladaptive coping strategies, anxiety and depression ($P=0.01$).

Relationship between socio-demographic variables and pre-test level of anxiety, depression, coping and compliance to therapeutic regimen was assessed. Baseline compliance had significant positive correlation with years of education ($r=0.202, P=0.05$). Pre-test anxiety levels had negative correlation with years of education ($r=-0.261, P=0.01$) and annual income ($r=-0.358, P=0.01$). Pre-test depression scores also had negative correlation with years of education ($r=-0.290, P=0.01$) and annual income ($r=-0.223, P=0.05$). Adaptive coping was found to be positively correlated with age ($r=0.245, P=0.05$).

**Conclusion**

The present study demonstrated that the pre-haemodialysis preparatory program is effective in improving anxiety, depression, coping and compliance to therapeutic regimen.
among chronic kidney disease patients who are to be initiated on haemodialysis treatment. Nurse led psycho-educational program will be helpful in providing cost effective quality care for chronic kidney disease patients in India where burden of chronic kidney disease is rising owing to rising burden of diabetes mellitus and hypertension.

**Key words:** Chronic kidney disease; haemodialysis; Stressors ;Anxiety; Depression; Coping ;Compliance to therapeutic regimen; Pre-haemodialysis preparatory program.