

CHAPTER IV

RESULTS

This chapter presents the findings and interpretation of the data acquired from recipients of kidney transplantation. The objective of present study was to assess “effectiveness of nurse led intervention on self care behaviour, psychological symptoms and quality of life among kidney transplant recipients in a selected tertiary care hospital of New Delhi”.

Data screening and tests applied

The data collected were coded, entered into Microsoft Excel sheet and all entries were checked for any errors (Annexure A-15). SPSS version 20 was utilized to analyze the data as per the objectives of the study. The data was checked for normal distribution by Kolmogorov-Smirnov test, where it was found that $p > 0.05$ for all the variables. The data has been summarized using Descriptive statistics like frequency & percentage for categorical data and mean/standard deviation for continuous data. inferential statistics was used for analysis. For inferential statistics, the level of significance was considered as 5% ($p < 0.05$) Independent t test was applied for continuous data to compare the statistical significance between the groups at baseline.

Assumptions for parametric tests

1. Data in each comparison group is normally distributed (Findings of Kolmogorov- Smirnov test presented in Table 1)
2. Data in each comparison group exhibit homogeneity of variance ie. Both the

groups are homogenous. The variance for each group for dependent variables was checked and both groups were found to be homogenous. The same has been presented in Table 3,4,7 and 9.

As both these assumptions were satisfied so parametric tests were utilized for self care practice, psychological symptoms & quality of life. Repeated measures ANOVA was utilized to compare the effectiveness of Nurse led intervention on outcome variables of recipients of kidney transplantation between experimental and control group to see the within group and between group difference at multiple time points. Post hoc analysis with Bonferroni correction was also done to compare the mean differences amongst pre-test Vs post test 1, posttest 1 Vs posttest 2 and pretest Vs posttest 2. The interaction effects have been shown as Time*Group.

Since the MGL adherence scale was on ordinal scale therefore, Mann Whitney U test for categorical variable was utilized for comparison of the effectiveness of nurse led intervention on adherence to immunosuppressive therapy between the groups.

Pearson's correlation was utilized to find the correlation amongst the variables. The level of significance was considered as p value <0.05.

The analysed data is organized and presented according to the objectives of the study under the following sub-heads:

1. Description of sociodemographic variables of kidney transplant recipients and comparison of sociodemographic variables for homogeneity between experimental and control group

2. Description of clinical variables of kidney transplant recipients and comparison of clinical variables for homogeneity between experimental & control group
3. Effectiveness of Nurse led intervention on Self care behaviour of kidney transplant recipients
4. Effectiveness of Nurse led intervention on Psychological symptoms of kidney transplant recipients.
5. Effectiveness of Nurse led intervention on Quality of life of kidney transplant recipients
6. Correlation between pretest Self care behaviour & Psychological symptoms of kidney transplant recipients.
7. Correlation between pretest Self care behaviour and Quality of life of kidney transplant recipients.
8. Correlation between pretest Psychological symptoms & Quality of life of kidney transplant recipients.

Table 1- Sociodemographic characteristics of kidney transplant recipients and comparison between experimental and control group

N=120

Sociodemographic characteristics	Experimental group (N=60)	Control Group (N=60)	Test value χ^2	p value	Test for Normality	
	Frequency (%)	Frequency (%)			KS test value	P value
Age (years)						
18-35	12 (20.0)	15(25.0)	0.57	0.73	0.17	0.23
36-45	19 (31.7)	22(36.7)				
46- 55	16(26.7)	17(28.3)				
>55	13 (21.6)	6(10.0)				
Mean \pm SD	40.05 \pm 10.91	39.45 \pm 10.09				
Gender						
Male	50 (83.3)	47(78.3)	0.48	0.64	0.50	0.68
Female	10 (16.7)	13(21.7)				
Transgender	0	0				
Educational Status						
Illiterate	2 (3.33)	3(5.0)	0.67	0.54	0.31	0.45
Primary	7 (11.7)	5 (8.3)				
Secondary	10 (16.7)	12 (20.0)				
Higher Secondary	25 (41.7)	23 (38.3)				
Graduation	11 (18.3)	9 (15.0)				
Post graduation and Higher	5(8.33)	8(13.4)				
Marital Status						
Married	45(75.0)	47(78.3)	0.63	0.82	0.42	0.51
Single	15(25.0)	13(21.7)				
Occupation						
Employed	25(41.6)	19(31.7)	0.39	0.23	0.37	0.46
Unemployed	35(58.4)	41(68.3)				
Area of residence						
Rural	18(30.0)	15(25.0)	0.74	0.43	0.25	0.35
Urban	42(70.0)	45(75.0)				
Type of Family						
Nuclear	34(56.7)	40(66.7)	0.27	0.34	0.51	0.66
Joint	26(43.3)	20(33.3)				

Family income per month (in Rs.):						
Below poverty line	27 (45.0)	24 (40.0)	0.48	0.69	0.40	0.53
5000-10000	10 (16.8)	16 (26.7)				
10000-20000	7 (11.6)	5(8.3)				
20000-30000	6 (10.0)	8 (13.4)				
30000-40000	7 (11.6)	5 (8.3)				
>40000	3(5.0)	2(3.3)				
Source of Reimbursement						
Yes	38(63.3)	40(66.7)	0.14	0.84	0.37	0.48
No	22(36.7)	20(33.3)				
Donor Type						
Living	58(96.7)	59(98.3)	0.89	1.00	0.59	0.72
Cadaver	2(3.3)	1(1.7)				

*Chi square/ Fisher's exact, p<0.05

Table 1 shows that majority of subjects belonged to the age group of 36 to 45 years, 31.7% in experimental group and 36.7% in control group. Majority of participants were males in both experimental (83.3%) & control group (78.3%). Majority of subjects had higher secondary education 41.7% and 38.3% in experimental group and control group respectively. Very less percentage of subjects had educational status of post graduation and higher in both experimental (8.33%) and control group (13.4%). Majority of subjects were married in both experimental (75.0%) and control (78.3%) group. A majority of subjects in both groups belonged to urban area of residence, experimental (70.0%) and control (75.0%). Majority of subjects were living in nuclear family in experimental group (56.7%) and control group (66.7%). Majority of subjects belonged to below poverty line group in experimental (45.0%) and control (40.0%) group. Majority of subjects in experimental (63.3%) and control (66.7%) group had undergone kidney transplantation with a source of reimbursement. Majority of subjects in experimental (96.7%) and control (98.3%) group were recipients of kidney from live donor.

The two groups were compared for differences in sociodemographic variables. Chi-square/ fisher's exact tests were performed as the data was categorical to check for any significant differences in sociodemographic variables.

The results showed that with regard to sociodemographic variables, no major difference was found between the groups with relation to age(p=0.73), gender (p=0.64), educational status (p=0.54), marital status (p=0.82), occupation (p=0.23), area of residence (p= 0.43), type of family (p=0.34), family income (p= 0.69), source of reimbursement (p= 0.84), donor type (p= 1.00).

Hence, it could be interpreted that both the groups were homogenous and comparable to each other with regard to sociodemographic variables as per the results.

Table 2 Clinical characteristics of kidney transplant recipients and comparison between experimental and control group **N=120**

Clinical characteristics	Experimental Group (N=60)	Control Group (N=60)	Test value χ^2	p value
	Frequency(%)	Frequency(%)		
History of medical illness				
Pulmonary Koch's	13(21.7)	9(15.0)	0.89	0.48
Hepatitis B	5(8.33)	7(11.3)	0.37	0.76
Hepatitis C	4(6.7)	6(10.0)	0.43	0.69
Comorbidities				
Diabetes Mellitus	15(25.0)	10(16.7)	1.26	0.56
Hypertension	42(70.0)	38(66.3)	0.62	0.77
Peripheral Vascular Disease	1(1.7)	2(3.3)	0.34	1.00
Presently Smoking	1(1.7)	2(3.33)	0.34	1.00
Presently taking	3 (5.0)	1 (1.7)	1.87	0.95

Tobacco				
Presently taking Alcohol	5(8.3)	7(11.3)	1.87	0.73
Post transplant complications				
Infection	16(26.7)	14(23.3)	0.17	0.48
Rejection	1(1.7)	0	1.00	1.00
NODAT(New Onset Diabetes after Transplantation)	17(28.3)	23(38.3)	0.71	0.52
Current serum creatinine (mg/dl)	Min.:0.8 Max: 2.4	Min.:0.9 Max: 3.2	0.68	0.73

*Chi square / fisher's exact, p<0.05

Table 2 indicates clinical characteristics of subjects. Majority of subjects had history of Pulmonary koch's in experimental (21.7%) and control (15.0%) group. Majority of subjects had Hypertension as comorbid illness in experimental (70.0%) and control (66.3%) group. Very less percentage of subjects took alcohol in experimental (8.3%) and control (11.3%) group. Less percentage of subjects developed infection in experimental (26.7%) and control (23.3%) group. Majority of subjects did not develop NODAT in experimental (71.7%) and control (61.7%) group.

Since all data was categorical in nature so, chisquare/ fisher's exact tests were utilized to make comparison of clinical variables between groups. It was found that the groups did not have significant differences for these variables.

Hence, based on these findings it could be interpreted that both the groups were homogenous and comparable to each other with regard to clinical variables.

Objective 1: To determine the effectiveness of Nurse led intervention on Self care behaviour of kidney transplant recipients.

H₀₁: There would be no statistical significant difference in self care behaviour of kidney transplant recipients between experimental and control group after the implementation of nurse led intervention.

H₁: There would be statistical significant improvement in self care behaviour of kidney transplant recipients receiving nurse led intervention as compared to the control group as assessed by Self care practice scale and MGL adherence scale at 5% level of significance.

Table 3 Comparison of Self care practice scores between experimental and control group at baseline N=120

Domains of self care practice	Experimental Group (60) Mean±SD	Control Group (60) Mean±SD	t- test	p value
Nutrition and diet	16.13±1.43	15.98±1.54	0.55	0.58
Medication management	9.90±1.27	9.52±1.20	1.69	0.09
Lifestyle modification	11.88±1.16	11.92±1.18	0.15	0.87
Self monitoring	16.22±1.43	16.23±1.12	0.07	0.94
Avoidance of Infection	17.82±1.06	17.95±1.08	0.68	0.49
Follow up	10.50±0.83	10.42±0.82	0.54	0.58
Psychological Care	8.82±1.24	8.78±1.25	0.14	0.88

Self care Practice Total	81.98±3.01	81.68±2.88	0.55	0.57
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*Independent t test, p<0.05

Table 3 compares the pretest scores of self care practice at baseline between the groups. The average mean score of self care practice total in experimental group was 81.98±3.01 and 81.68±2.88 in control group respectively. Both groups were comparable in terms of baseline scores with p= 0.57. The scores in all the domains of self care practice ie. nutrition and diet, medication management, lifestyle modification, self monitoring, avoidance of infection, follow up and psychological care were comparable with p>0.05.

Table 4 Comparison of Adherence to immunosuppressive therapy scores between experimental and control group at the baseline

N=120

SNo	Variable	Experimental Group (60)	Control Group(60)	z(test value)	P Value
		Mean Rank	Mean Rank		
1.	Adherence to Immunosuppressive therapy	58.39	62.61	-0.73	0.46

Mann whitney test, *p<0.05

Table 4 depicts mean rank score for adherence to immunosuppressive therapy of the two groups. No statistical significant difference was seen in adherence scores between the groups (p=0.46).

Therefore, the subjects in both groups (experimental and control) were homogenous with regard to self care behaviour at baseline.

Table 5 Comparison of self care practice scores within and between experimental and control group

SNo	Self care practice domains	Max. Score	Assessment	Experimental Group Pretest (n=60) Posttest1 (n=59) Posttest2 (n=59)	Control Group Pretest (n=60) Posttest1 (n=60) Posttest2 (n=60)	df	Between Groups		Post hoc analysis between the groups p value ¹						
							F (test value)	p Value	Pretest Vs Posttest 1		Pretest Vs Posttest 2		Post test 1 Vs Post test 2		Effect size
				Mean±SD	Mean±SD				Mean Diff.	p value	Mean Diff.	p value	Mean Diff.	p value	
1.	Nutrition and diet	20	Pretest Posttest1 Posttest2	16.13±1.43 16.35±2.56 17.30±2.54	15.98±1.54 14.98±1.24 14.58±1.44	1.2	32.35	0.001*	0.31	0.05	0.11	1.00	0.27	0.005*	1.05
	Within Group Diff. Time*Group		p value	0.001*	0.001*		3.17 42.19	0.001							
2.	Medication management	16	Pretest Posttest1 Posttest2	9.90±1.27 10.87±1.84 10.0±1.72	9.52±1.20 9.25±1.11 9.62±1.04	1.7	16.18	0.001*	0.35	0.04*	0.10	1.00	0.23	0.04*	0.74
	Within Group Diff. Time*Group		p value	0.001*	0.07		4.15 7.23	0.008							

SNo	Self care practice domains	Max Score	Assessment	Experimental Group Pretest (n=60) Posttest1 (n=59) Posttest2 (n=59)	Control Group Pretest (n=60) Posttest1 (n=60) Posttest2 (n=60)	df	Between Groups		Post hoc analysis between the groups p value ¹						
							F (test value)	p Value	Pretest Vs Posttest 1		Pretest Vs Posttest 2		Posttest1 Vs Posttest 2		Effect size
				Mean±SD	Mean±SD				Mean Diff.	p value	Mean Diff.	p value	Mean Diff.	p value	
3.	Lifestyle Modification	16	Pretest Posttest1 Posttest2	11.88±1.16 12.13±1.94 12.83±1.94	11.92±1.18 11.75±0.87 11.70±0.72	1.4	12.84	0.001*	0.04	1.00	0.36	0.03*	0.32	0.001*	0.66
	Within Group Diff. Time*Group		p value	0.001*	0.19		5.92 17.26	0.001							
4.	Self Monitoring	20	Pretest Posttest1 Posttest2	16.22±1.43 16.43±2.43 16.77±2.53	16.23±1.12 15.37±1.44 14.58±1.61	1.3	24.83	0.001*	0.32	0.19	0.55	0.01*	0.22	0.04*	0.92
	Within Group Diff. Time*Group		p value	0.14	0.001*		6.27 34.64	0.001							
5.	Avoidance of Infection	20	Pretest Posttest1 Posttest2	17.82±1.06 17.98±2.55 17.90±2.53	17.95±1.08 16.85±1.41 16.97±1.50	1.3	9.53	0.001*	0.46	0.02*	0.45	0.04*	0.08	1.00	0.57

SNo	Self care practice domains	MaxScore	Assessment	Experimental Group Pretest (n=60) Posttest1 (n=59) Posttest2 (n=59)	Control Group Pretest (n=60) Posttest1 (n=60) Posttest2 (n=60)	df	Between Groups		Post hoc analysis between the groups p value ¹							
							F (test value)	p Value	Pretest Vs Posttest 1	Pretest Vs Posttest 2	Posttest1 Vs Posttest 2	Mean Diff.	p value	Mean Diff.	p value	Mean Diff.
			p value	0.68	0.001*		5.77									
							8.22	0.005								
6.	Follow up	12	Pretest Posttest1 Posttest2	10.50±0.83 10.57±1.60 10.33±1.52	10.42±0.82 10.05±0.89 9.60±1.04	1.5	4.96	0.01*	0.15	0.48	0.49	0.001*	0.35	0.001*	0.41	
			p value	0.94	0.001*		11.51									
							6.75	0.01								
7.	Psychological Care	16	Pretest Posttest1 Posttest2	8.82±1.24 9.25±1.73 9.45±2.82	8.78±1.25 8.03±0.99 7.15±1.23	1.4	20.28	0.001*	0.15	0.56	0.50	0.04*	0.34	0.19	0.83	

	Within Group Diff. Time*Group		p value	0.13	0.001*		4.12								
							27.39	0.001							
8.	Self care Practice Total	120	Pretest	81.98±3.08	81.68±2.88										
			Posttest1	93.58±12.60	86.28±3.44	1.1	28.30	0.001*	8.10	0.001*	7.55	0.001*	0.54	0.17	0.98
			Posttest2	94.58±12.88	84.20±4.13										
	Within Group Diff. Time*Group		p value	0.001*	0.001*		86.97								
							36.24	0.001							

*Repeated Measures ANOVA, p<0.05; t test †, p<0.05

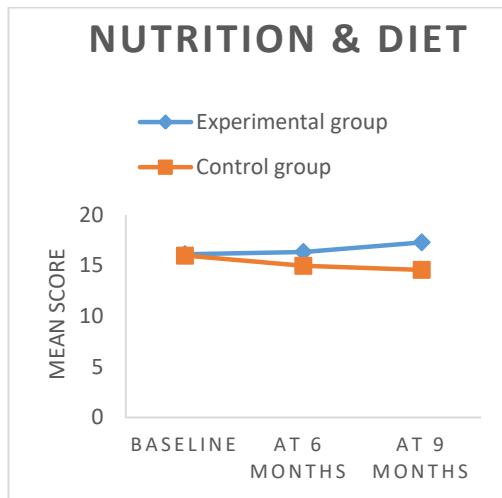


Fig 5a Comparison of Nutrition and diet

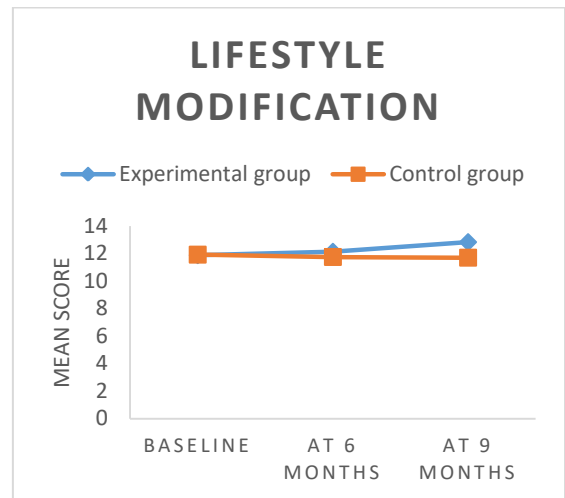


Fig 5c Comparison of Lifestyle modification

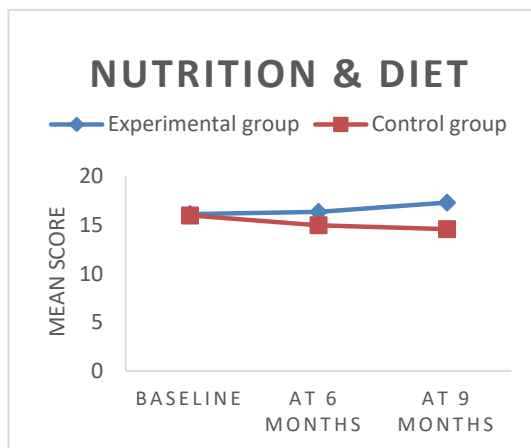


Fig 5b Comparison of Medication management

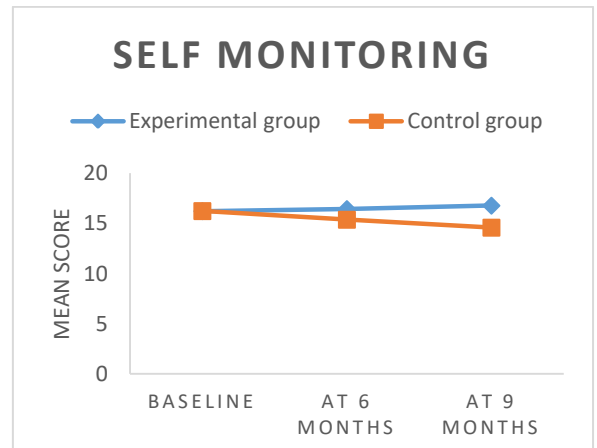


Fig 5d Comparison of Self monitoring

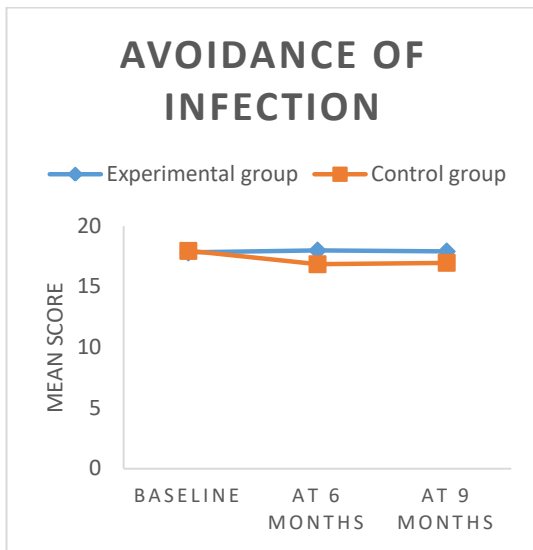


Fig 5e Comparison of Avoidance of infection

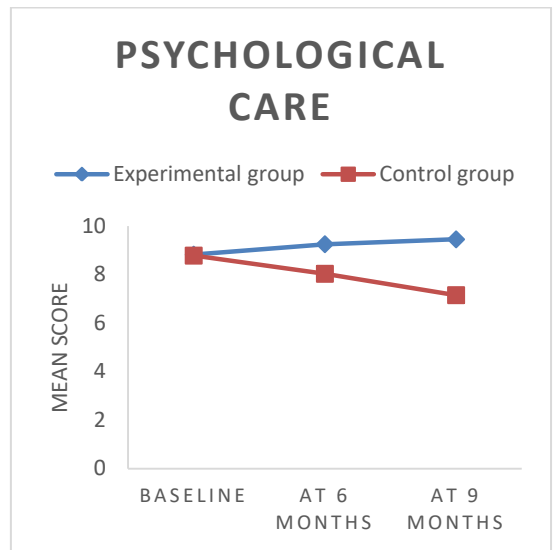


Fig 5g Comparison of Psychological care

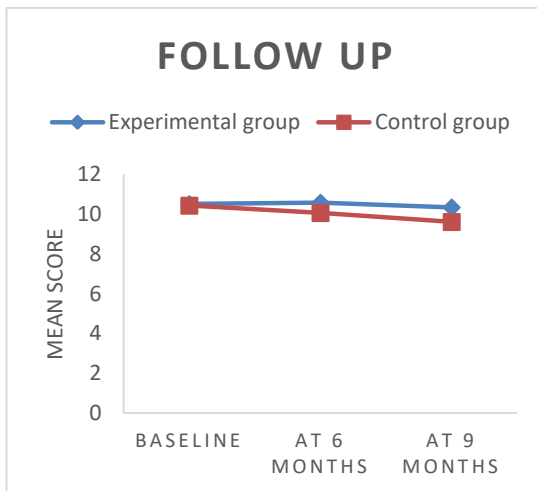


Fig 5f Comparison of Follow up

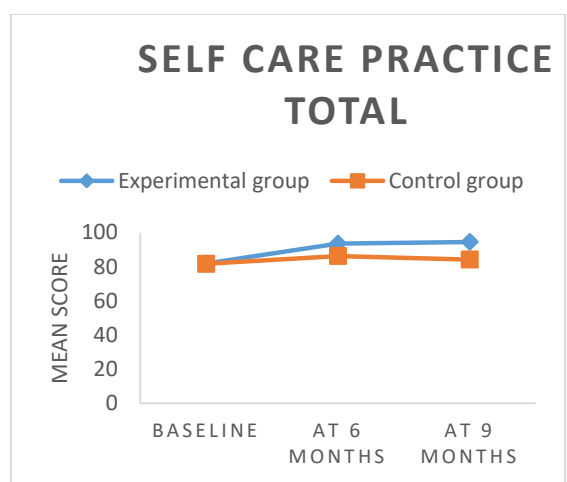


Fig 5h Comparison of self care practice total

Figure 5 Line graph showing comparison of different domains and total self care practice mean scores between experimental & control group.

Table 5 and **Figure 5** depict that mean score of **nutrition and diet** domain increased in post-tests at six and nine months as compared to pre test in experimental group, whereas the mean score decreased in control group from pre-test to post-tests at six and nine months showing significant within the group difference. The difference in the mean score of nutrition and diet domain was found to be significant between the two groups ($p=0.001$). There was a significant difference between post test 1 and post-test 2 as seen in post hoc analysis. It can be inferred that nurse led intervention was effectual in improving Nutrition and diet domain of self care practice.

The mean score for **Medication management** in experimental group improved from pre test to posttest 1 and then slightly decreased from posttest1 to posttest2, showing significant within group difference. The average score of medication management in control group slightly reduced from pretest to post-test 1 and the improved from posttest 1 to posttest 2. The variation in groups expressed as mean difference for Medication management domain score was statistically significant ($p=0.001$). There was a significant difference in score between pretest and at six months & also between six months and nine months as seen in post hoc analysis. It can be inferred that Nurse led intervention effectively improved the Medication management domain of self care practice.

The mean score of **Lifestyle modification** domain increased from pretest to post tests in experimental group, showing significant within the group difference. The mean scores in control group decreased from pretest to post-tests. The difference in the mean scores of lifestyle modification domain between the groups was seen

statistically significant with $p=0.001$. It can be inferred that Nurse led intervention is effective in improving lifestyle modification domain of self care practice.

The mean score of **Self monitoring** domain increased slightly from pretest to posttests in experimental group, whereas the mean score decreased from pretest to posttests in control group, showing significant within the group difference. The difference in the mean scores of self monitoring domain between the two groups was found to be significant ($p=0.001$). It can be inferred that Nurse led intervention is effective in improving self monitoring domain of self care practice.

The mean score of **Avoidance of Infection** domain increased slightly and then decreased slightly from baseline to Post tests in experimental group, whereas the mean score decreased and then increased from baseline to post tests in control group showing significant within the group difference. The results showed statistical significant mean score difference between the groups for this domain ($p=0.001$). It can be inferred that Nurse led intervention is effective in improving Avoidance of Infection domain of self care practice.

The mean score of **Follow up** domain increased slightly and then decreased from pre test to post-tests in experimental group. The mean score decreased from pre-tests to post tests in control group showing within the group difference to be significant. The difference in the mean score of follow up domain of self care between experimental and control group was seen statistically significant ($p=0.001$). It can be inferred that Nurse led intervention is effective in improving follow up domain of self care practice.

The mean score of **Psychological Care** domain slightly increased from pretest to post tests in experimental group, whereas the mean score decreased from pretest to post tests in Control group, showing significant within the group difference. The results showed statistical significant mean scores difference of Psychological care domain of self care between the groups ($p=0.001$). It can be inferred that Nurse led intervention is effective in improving psychological care domain of self care practice.

The mean score of **Self care Practice** increased from pretest to post tests in experimental group, showing significant within the group difference. The mean score increased from baseline to Post test 1 and then decreased from post test 1 to posttest 2 in control group, showing significant within the group difference. The mean difference in the total self care practice scores between the groups was statistically significant ($p=0.001$). The between group effect size 0.98 for total self care depicts high statistical significance between two groups.

Hence, it can be inferred that Nurse led intervention was efficacious in improving Self care practice of kidney transplant recipients.

Table 6 Comparison of adherence to immunosuppressive therapy scores between experimental and control group

SNo	Variable	Assessment	Experimental Group	Control Group	Between Groups	
			Pretest (n=60)	Pretest (n=60)		
			Posttest1 (n=59)	Posttest1 (n=60)		
			Posttest2 (n=59)	Posttest2 (n=60)		

			Mean Rank	Mean Rank	z(test value)	P Value	Effect size
1.	Adherence to Immunosuppressive therapy	Pretest	58.39	62.61	-0.73	0.46	-
		Posttest1	66.57	54.43	-2.14	0.03*	0.33
		Posttest2	72.03	48.98	-4.09	0.001*	0.68

Mann- whitney test, *statistically significant, $p < 0.05$

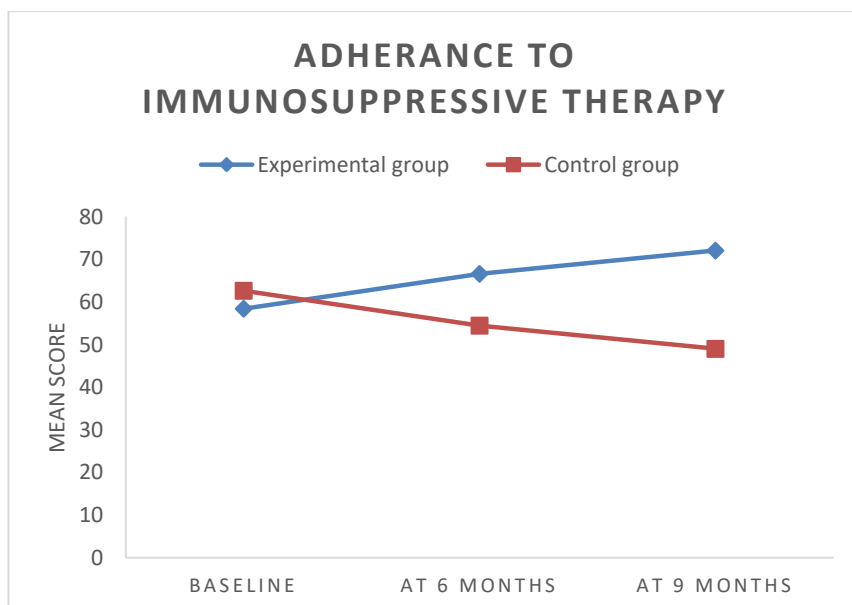


Figure 6 Line graph showing comparison of adherence to immunosuppressive therapy mean scores between experimental and control group

Table 6 and Figure 6 compare the adherence to immunosuppressive therapy scores between the groups. The groups exhibited statistical significant difference between in Posttest 1 ($p=0.03$) and Posttest2 ($p=0.001$).

It could be inferred that Nurse led intervention was helpful in improving adherence to immunosuppressive therapy among recipients of kidney transplantation.

Since there has been statistically significant difference for self care practice and adherence to immunosuppressive therapy between experimental and control group, therefore the nurse led intervention has improved self care behaviour for the subjects in the group that received intervention. The between group effect size 0.68 at post test 2 depicts high statistical significance between two groups.

Hence, research hypothesis H_1 was retained and null hypothesis H_{01} was rejected. It can be interpreted that nurse led intervention was effective in improving self care behaviour as compared to routine care for kidney transplant recipients.

Objective 2: To determine the effectiveness of Nurse led intervention on Psychological symptoms of kidney transplant recipients.

H_{02} : There would be no statistical significant difference in psychological symptoms of kidney transplant recipients between experimental and control group after the implementation of nurse led intervention.

H_2 : There would be statistical significant decrease in psychological symptoms of

kidney transplant recipients receiving nurse led intervention as compared to control group as assessed by DASS 21 at $p < 0.05$.

Table 7 Comparison of psychological symptoms scores between experimental and control group at the baseline.

N=120

Variables	Experimental Group (60) Mean±SD	Control Group (60) Mean±SD	t- test	p* value
Stress	3.12±1.57	3.13±1.46	0.06	0.95
Anxiety	3.40±1.87	3.23±1.73	0.50	0.61
Depression	3.10±1.41	3.23±1.44	0.51	0.67

*Independent t test, $p < 0.05$

Table 7 reveals that at baseline, subjects in experimental and control groups had almost similar scores for psychological symptoms. The level of significance for stress ($p = 0.95$), anxiety ($p = 0.61$), and depression ($p = 0.67$) was not found to be significant. Hence both the groups were similar at baseline for psychological symptoms.

Table 8 Comparison of psychological symptoms scores within and between experimental and control group

SN	Variable	Assessment	Experimental Group Pretest (n=60) Posttest1 (n=59) Posttest2 (n=59)	Control Group Pretest (n=60) Posttest1 (n=60) Posttest2 (n=60)	df	Between Groups		Post hoc analysis between the groups p value [¶]						
						F(test value)	P value	Pretest Vs Posttest 1	Pretest Vs Posttest 2	Posttest1 Vs Posttest 2	Mean Diff.	p value	Mean Diff.	p value
1	Stress Max Score: 21	Pretest Posttest1 Posttest2	3.12±1.57 2.43±1.45 2.78±1.51	3.13±1.46 3.68±1.63 4.78±2.12	1.5	35.74	0.001*	0.06	1.00	0.65	0.001*	0.72	0.001*	1.10
	Within Group Diff. Time*Group	P value	0.001*	0.001*		22.89 44.49	0.001							
2	Anxiety Max Score: 21	Pretest Posttest1 Posttest2	3.40±1.87 2.55±1.56 2.82±1.53	3.23±1.73 3.95±1.83 4.87±2.11	1.7	46.37	0.01*	0.07	1.00	0.52	0.001*	0.59	0.001*	1.25
	Within Group Diff. Time*Group	P value	0.001*	0.001*		15.0 62.45	0.001							
3	Depression Max Score: 21	Pretest Posttest1 Posttest2	3.10±1.41 2.43±1.28 2.33±1.27	3.23±1.44 3.68±1.58 4.60±1.64	1.5	65.92	0.001*	0.10	0.50	0.30	0.02*	0.40	0.001*	1.50

	Within Group Diff. Time*Group	P value	0.001*	0.001*		10.36								
						87.24	0.001							

*Repeated

measures

ANOVA,

p<0.05;

t

test

,

p<0.05

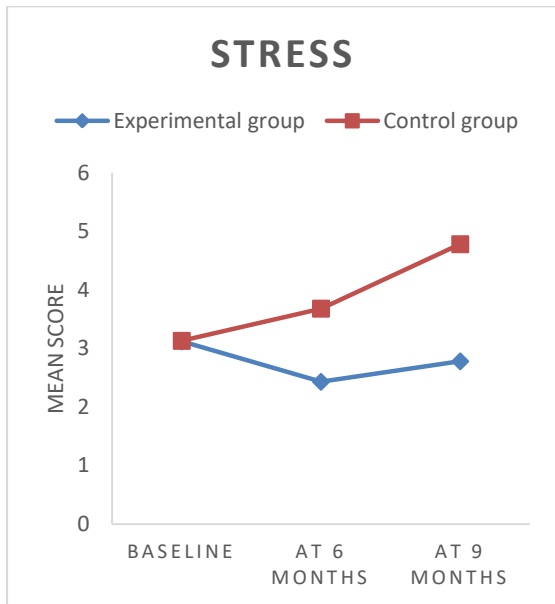


Fig 7a Comparison of stress

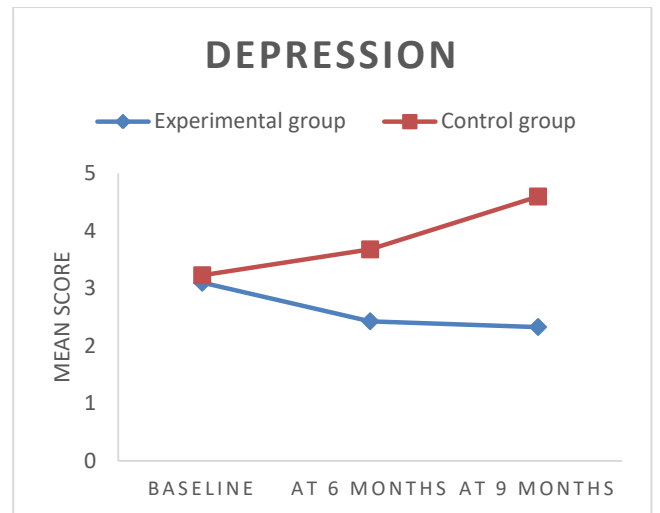


Fig 7c Comparison of depression

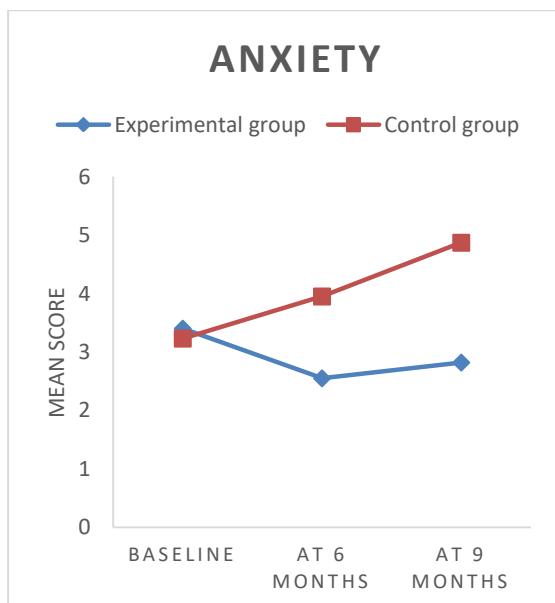


Fig 7b Comparison of anxiety

Figure 7 Line graph showing comparison of psychological symptoms mean scores between the groups

Table 8 and Figure 7 depict that the mean **stress** scores of experimental group reduced first and then increased slightly from time point six months to nine months, which showed significant within the group difference. The mean stress scores of control group increased from pretest to post tests showing significant within the group difference. The difference between the groups for mean stress scores was found to be significant ($p=0.001$).

The mean **anxiety** scores in both the groups showed significant within group difference. In the experimental group there was a decrease from pre test to post test 1 and then increase in mean scores from post test 1 to post test 2 for anxiety whereas the mean anxiety scores of control group increased from pretest to post tests showing significant within the group difference. The mean difference in score for anxiety between the groups was significant statistically ($p=0.001$).

The mean **depression** scores in experimental group decreased from pretest to post tests showing significant within the group difference. In the control group, mean depression scores increased from pretest to post tests showing significant within the group difference. The mean score difference between the groups for depression was statistically significant ($p=0.001$).

The effect size which was more than one for all the psychological symptoms represents high statistical significance between groups. Hence, it can be inferred that nurse led intervention was efficacious in reducing psychological symptoms in kidney transplant recipients who received the intervention.

Hence, research hypothesis H_2 was retained and null hypothesis H_{02} was rejected. It can be interpreted that nurse led intervention was effective in reducing psychological symptoms as compared to routine care for kidney transplant recipients.

Objective 3: To determine the effectiveness of Nurse led intervention on Quality of life of kidney transplant recipients.

H₀₃: There would be no statistical significant difference in quality of life of kidney transplant recipients between experimental and control group after the implementation of nurse led intervention.

H₃: There would be statistical significant improvement in quality of life of kidney transplant recipients receiving nurse led intervention as compared to control group as assessed by WHOQOL- BREF at $p < 0.05$.

Table 9 Comparison Quality of life scores between experimental and control group at the baseline **N=120**

Variables	Experimental Group(60) Mean±SD	Control Group(60) Mean±SD	t- test	p* value
Physical Domain	22.77±2.60	23.03±2.41	0.58	0.56
Psychological Domain	20.65±2.23	20.38±2.17	0.66	0.50
Social Domain	8.70±1.70	8.73±1.57	0.11	0.91
Environment Domain	26.17±2.87	25.55±2.50	1.25	0.21

*Independent t test , $p < 0.05$

Table 9 reveals that at baseline, subjects in experimental and control groups had almost similar sum total for all domains of quality of life and no difference of statistical significance was seen between the groups. Hence both the groups were comparable at baseline for quality of life.

Table 10 Comparison of quality of life within and between experimental and control group

SNo	Variable	Assessment	Experimental Group Pretest (n=60) Posttest1 (n=59) Posttest2 (n=59)	Control Group Pretest (n=60) Posttest1 (n=60) Posttest2 (n=60)		Between Groups		Post hoc analysis between the groups p value [¶]						Effect size
								Pretest Vs Posttest 1	Pretest Vs Posttest 2	Posttest1 Vs Posttest 2				
			Mean±SD	Mean±SD	df	F(test value)	p value	Mean Diff.	p value	Mean Diff.	p value	Mean Diff.	p value	
1.	Physical Domain Max Score: 35	Pretest Posttest1 Posttest2	22.77±2.60 22.82±3.74 23.30±3.78	23.03±2.41 21.68±2.24 22.63±2.16	1.4	4.51	0.02*	0.65	0.03*	0.06	1.00	0.71	0.001*	0.39
	Within Group Diff. Time*Group	P value	0.30	0.001*		5.57								
2.	Psychological Domain Max Score: 30	Pretest Posttest1 Posttest2	20.65±2.23 20.78±3.16 21.17±3.23	20.38±2.17 20.15±1.81 20.62±1.75	1.3	0.39	0.59	0.05	1.00	0.37	0.45	0.42	0.002*	-
	Within Group Diff. Time*Group	P value	0.31	0.12		2.28								
3.	Social Domain Max Score: 15	Pretest Posttest1 Posttest2	8.70±1.70 8.87±1.95 8.88±1.79	8.73±1.57 8.45±1.22 8.67±1.33	1.5	1.58	0.21	0.06	1.00	0.05	1.00	0.11	0.49	-
	Within Group Diff. Time*Group	P value				0.29	0.58							

	Within Group Diff. Time*Group	P value	0.50	0.19		0.42								
						0.72	0.39							
4.	Environment Domain Max Score: 40	Pretest Posttest1 Posttest2	26.17±2.87 25.88±4.36 25.80±4.16	25.55±2.50 25.83±2.52 25.40±2.30	1.2	0.77	0.40	0.01	1.00	0.02	1.00	0.25	0.05	-
	Within Group Diff. Time*Group	P value	0.52	0.11		0.38								
						0.15	0.69							

*Repeated

measures

ANOVA,

p<0.05;

t

test

,

p<0.05

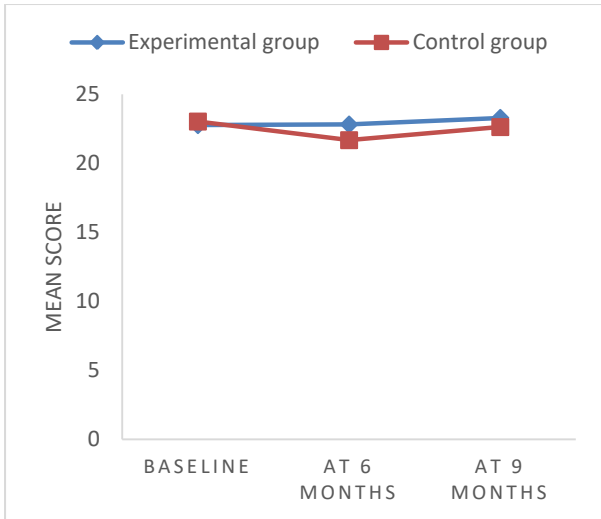


Fig 8a Comparison of Physical domain

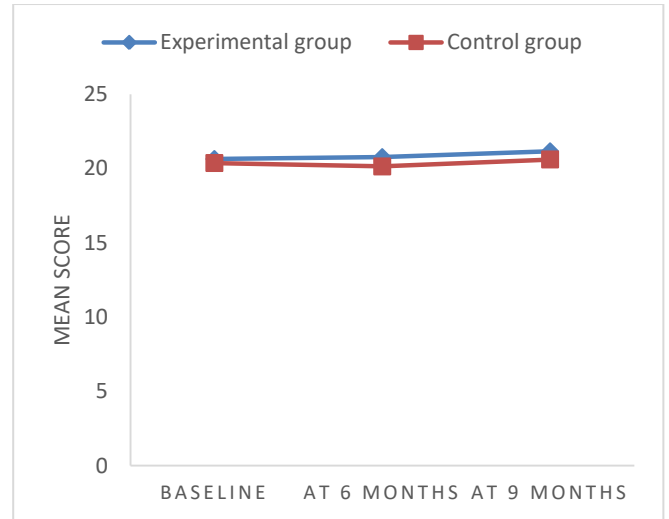


Fig 8b Comparison of Psychological domain

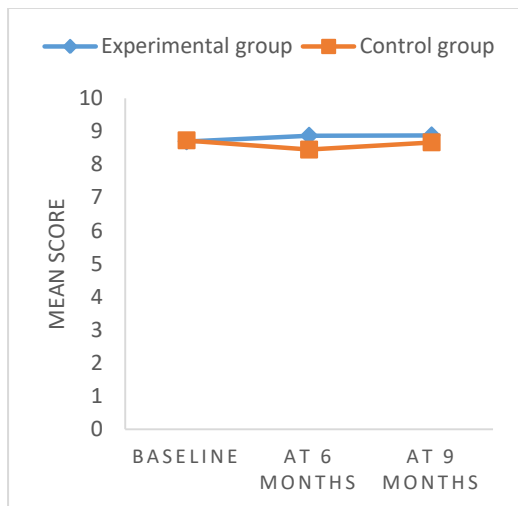


Fig 8c Comparison of Social domain

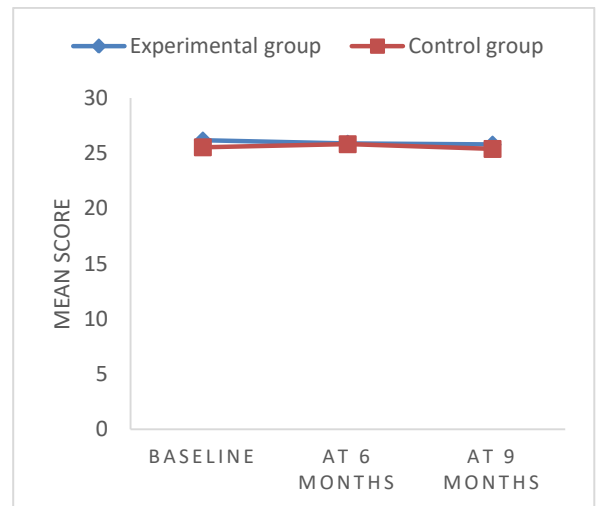


Fig 8d Comparison of Environment domain

Figure 8 -Line graph showing comparison of domains of quality of life between experimental & control group

Table 10 and Figure 8 depict that the mean scores of **physical domain** in the experimental group increased from pre test to post tests. The mean score of physical domain in control group decreased and then increased from pre-test to post-tests, showing significant within the group difference. The two groups showed significant difference for physical domain scores of quality of life ($p=0.02$).

The mean scores of **psychological domain** in the experimental group increased slightly from pre-test to post-tests. On the other hand the mean scores of psychological domain in the control group decreased from pre-test to post-tests. A difference for psychological domain scores was found between the groups but it was not found to be statistically significant ($p=0.59$).

The mean scores of **social domain** in the experimental group increased from pre test to post tests at six and nine months. Whereas, mean scores of social domain in the control group decreased first and then increased in post-test 2. The mean difference for social domain between experimental and control group was not significant ($p=0.21$).

The scores in the experimental group for **environment domain** decreased slightly from pre test to post tests at six and nine months. The scores in control group for environment domain increased and then slightly decreased at post-test 2. The mean difference between experimental & control group for environment domain was not significant ($p=0.40$).

Hence, research hypothesis H_3 was partially retained and null hypothesis H_{03} was rejected. It can be interpreted that nurse led intervention was effective in improving

physical domain of quality of life as compared to routine care for kidney transplant recipients.

Secondary Objective 1: To find the correlation between pre-test Self care behaviour and Psychological Symptoms of kidney transplant recipients.

Table 11 Correlation between pre test self care behaviour and psychological symptoms

N=120

S.No.	Self care behaviour	Psychological symptoms	
		r	p
1.	Self care practice	-0.21	0.02*
2.	Adherence to therapy	-0.27	0.003*

r: *Pearson's Correlation Coefficient, $p < 0.05$

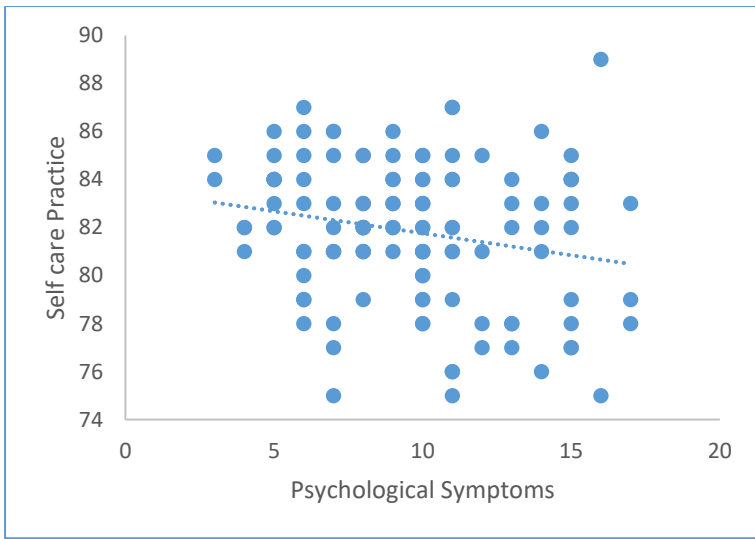


Fig 9a Correlation between Self care practice and psychological symptoms

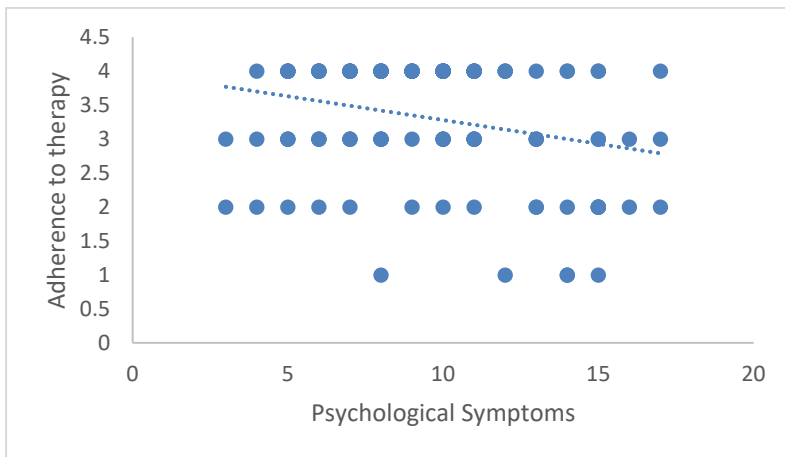


Fig 9b Correlation between Adherence to therapy and Psychological symptoms

Figure 9 Scatter plot showing correlation of pre test self care behaviour with psychological symptoms

Table 11 and Figure 9 show the negative correlation amongst self care practice and psychological symptoms. It was found to be significant with $p = 0.02$.

There was a negative correlation between adherence to therapy and psychological symptoms which was also found significant with $p = 0.003$. Thus, it is inferred that psychological symptoms can decrease the self care practice and also decrease the adherence to immunosuppressive therapy of the recipients of kidney transplantation.

Secondary Objective 2: To assess correlation between pretest Self care behaviour & Quality of life of kidney transplant recipients.

Table 12 Correlation between pre test self care practice and quality of life

N=120

S.No.	Domains of Quality of life	Self care practice	
		r	p
1	Physical Domain	0.04	0.66
2	Psychological Domain	0.02	0.79
3	Social Domain	-0.13	0.13
4	Environment Domain	-0.02	0.76

r: Pearson's Correlation Coefficient, ($p < 0.05$)

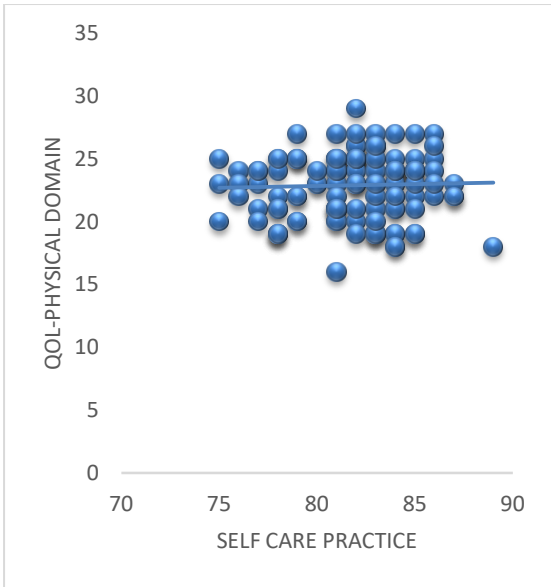


Fig 10a Correlation between SCP and physical domain

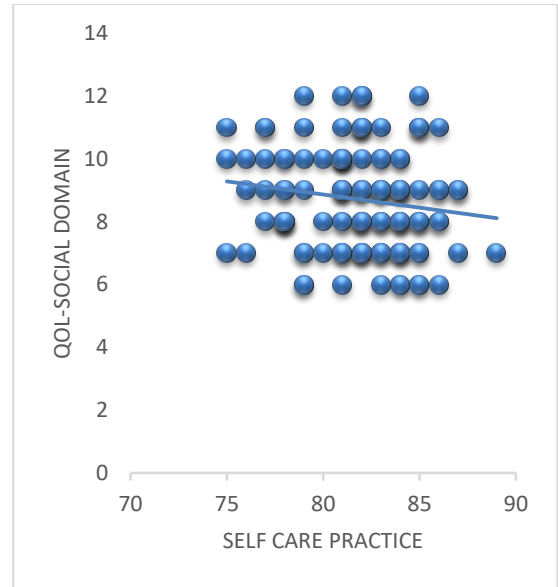


Fig 10c Correlation between SCP and social domain

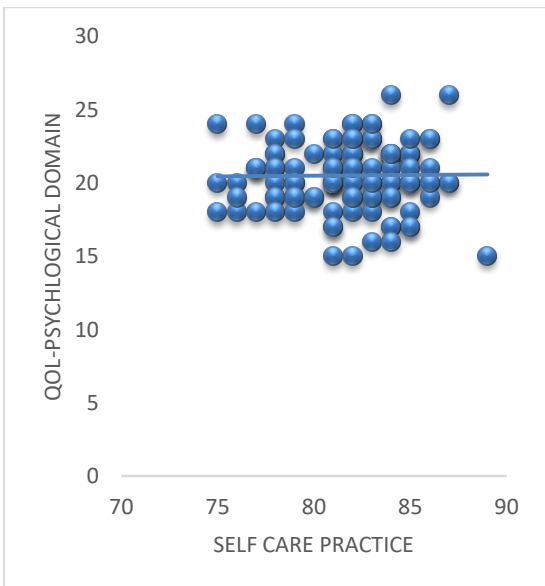


Fig 10b Correlation between SCP and psychological domain

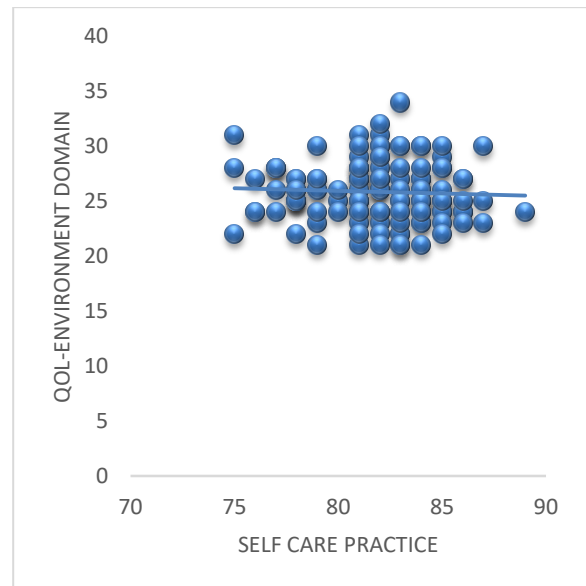


Fig 10d Correlation between SCP and environment domain

Figure 10 Scatter plot showing correlation of pre test self care practice and QOL

Table 12 and Figure 10 show positive weak correlation between self care practice & physical domain of QOL. A weak positive correlation was seen between self care practice & psychological domain. A weak negative correlation existed between self care practice and social and environment of QOL. Thus, it can be inferred that self care practice can positively affect the quality of life of the kidney transplant recipients.

It can be seen that no statistical significant correlation is found between self care practice and the domains of quality of life.

Table 13 Correlation between pre test adherence to immunosuppressive therapy and quality of life **N=120**

S.No.	Domains of Quality of life	Adherence to Immunosuppressive Therapy	
		r	p
1	Physical Domain	0.35	0.001*
2	Psychological Domain	0.30	0.001*
3	Social Domain	-0.02	0.77
4	Environment Domain	0.12	0.16

r: Pearson's Correlation Coefficient, (p<0.05)

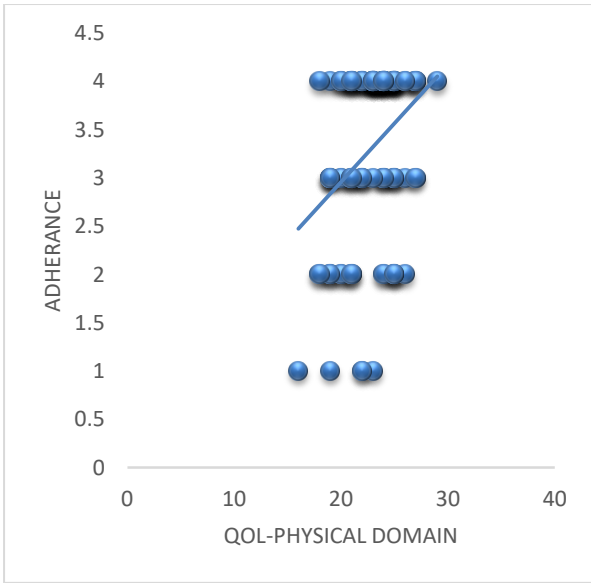


Fig 11a Correlation between adherence and physical domain

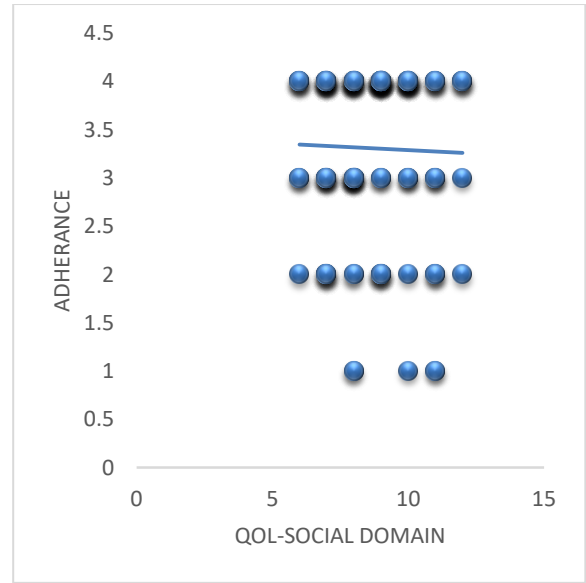


Fig 11c Correlation between adherence and social domain

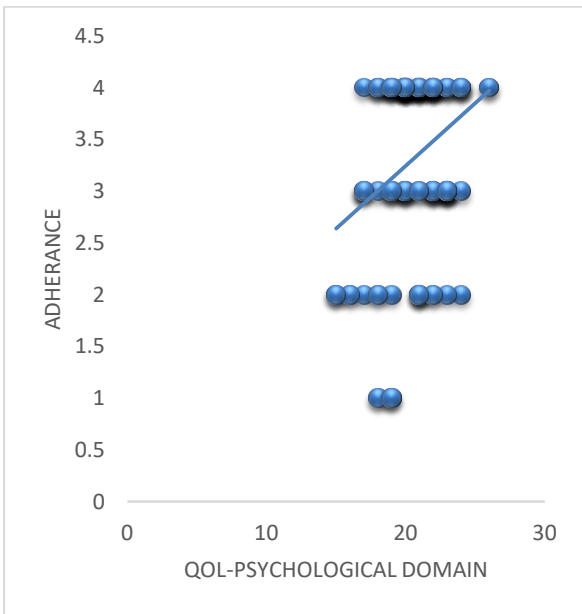


Fig11b Correlation between adherence and psychological domain

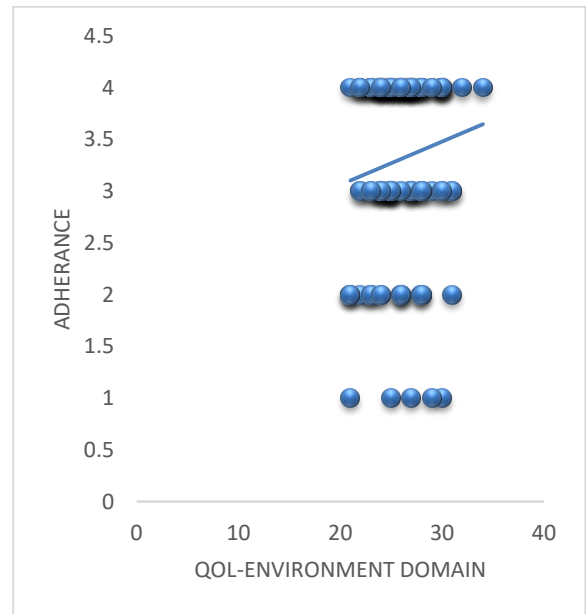


Fig 11d Correlation between adherence and social domain

Figure 11 Scatter plot showing correlation of pre test adherence to immunosuppressive therapy & quality of life

Table 13 and Figure 11 depict that positive correlation between adherence to immunosuppressive therapy & physical domain of quality of life was statistically significant ($p=0.001$). A statistical significant positive correlation was found between adherence to immunosuppressive therapy and psychological domain ($p=0.001$). There was a weak negative correlation between adherence to immunosuppressive therapy and social domain ($p=0.77$). A weak positive correlation was seen between adherence to immunosuppressive therapy & environment domain ($p=0.001$). Thus, it can be inferred that adherence to immunosuppressive therapy can increase the score of physical and psychological domain of quality of life of the recipients.

Secondary Objective 3: To assess Correlation between pretest Psychological symptoms and Quality of life of kidney transplant recipients.

Table 14 Correlation between pre test psychological symptoms and quality of life

N=120

S.No.	Domains of Quality of life	Psychological symptoms	
		r	p
1	Physical Domain	-0.50	0.001*
2	Psychological Domain	-0.58	0.001*
3	Social Domain	-0.31	0.001*
4	Environment Domain	-0.33	0.001*

r: Pearson's Correlation Coefficient, ($p<0.05$)

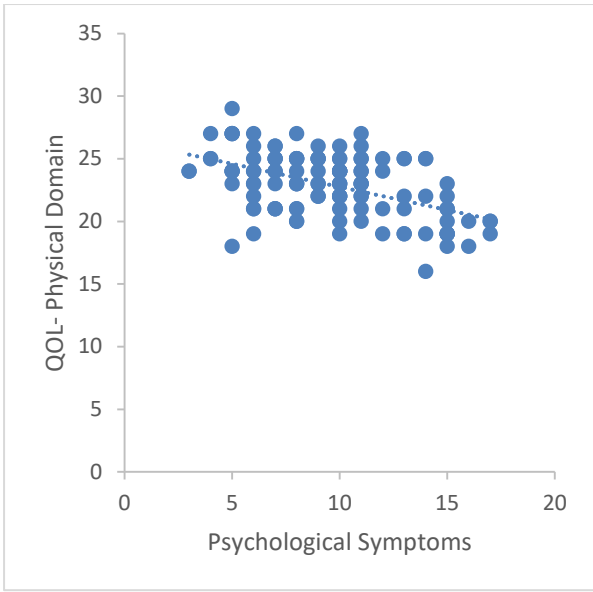


Fig 12a Correlation between psychological symptoms and physical domain

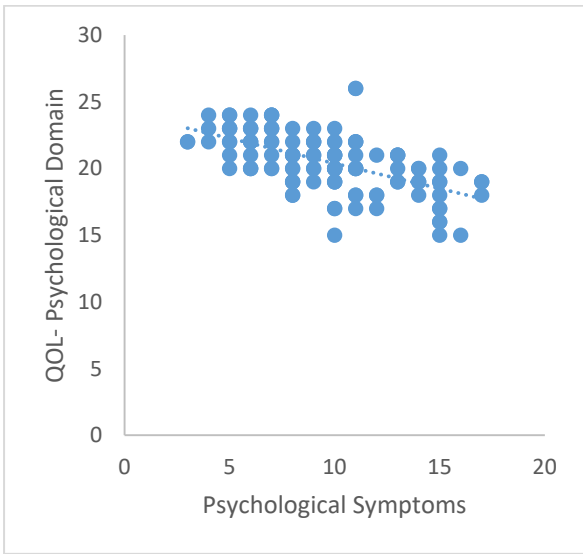


Fig 12b Correlation between psychological symptoms and psychological domain

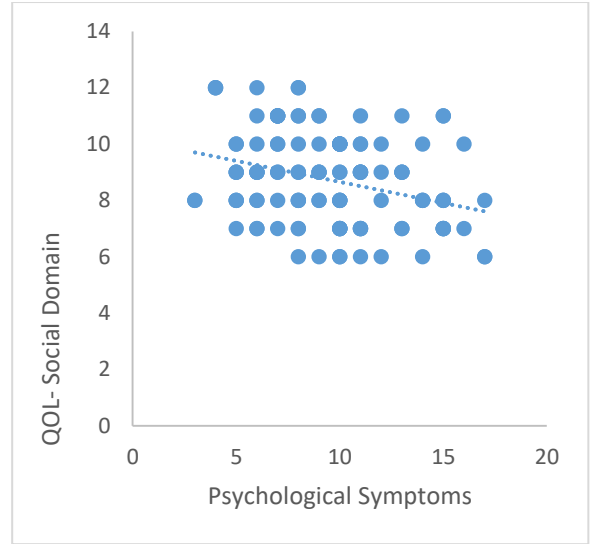


Fig 12c Correlation between psychological symptoms and social domain

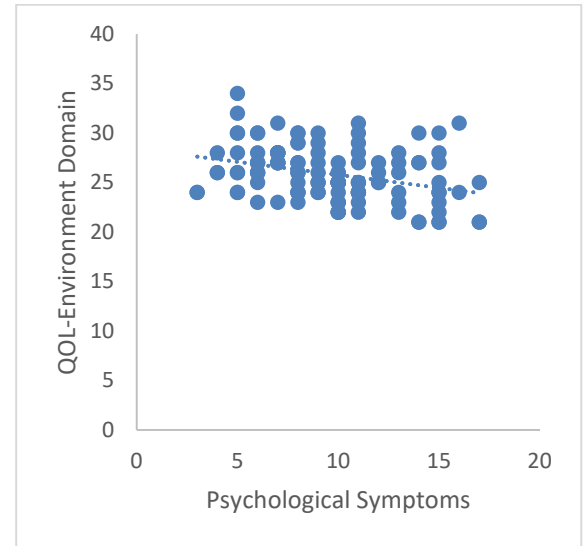


Fig 12d Correlation between psychological symptoms and environment domain

Figure 12 Scatter plot showing correlation of pre test psychological symptoms & quality of life

Table 14 and Figure 12 show that a statistical significant negative correlation existed between all domains of quality of life and psychological symptoms with $p = 0.001$. The participants who had a high score on psychological symptoms presented with lower scores on physical, psychological, social and environment domains of quality of life. Thus, it can be inferred that psychological symptoms can negatively affect the quality of life in all the domains of the recipients.

Additional Findings:

Admissions to the hospital- The participants were followed up for one year after the study for admission to the hospital for any reason. The total number of patients in each group who were admitted with clinical problems relevant to the nurse led intervention were studied (viz. infection, graft dysfunction and drug non adherence).

Table No. 15 Comparison of admission to hospital between experimental and control group.

Variable	Experimental Group (N=59)	Control Group (N=60)	Test value χ^2	p value
	Frequency(%)	Frequency(%)		
Admission to hospital	2 (3.38)	13 (21.66)	9.21	0.004
Infection	1 (1.69)	8 (13.33)	5.88	0.03*
Graft dysfunction	1 (1.69)	0	1.008	1.00
Immunosuppression	0	5 (8.33)	5.30	0.02*

*Chi square/ Fisher's exact, $p < 0.05$

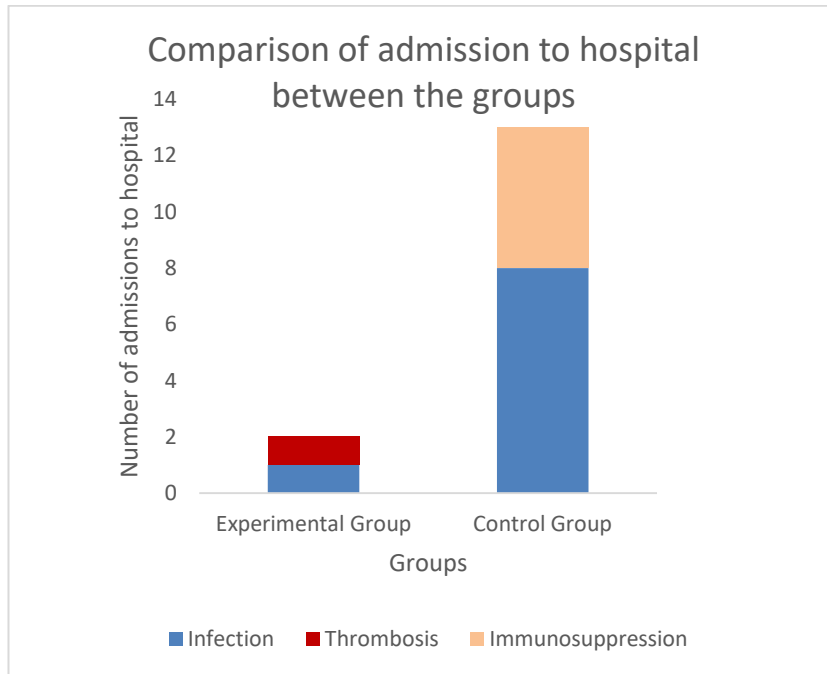


Figure 13 Bar graph showing comparison of admission to hospital between experimental and control group

Table 15 and Figure 13 show that 3.38% participants from experimental group and 21.66% participants from the control group were admitted to the hospital. The difference between the groups was significant with $p = 0.03$. A significant difference with $p = 0.02$ was also found between the groups for the number of participants admitted for immunosuppression where 8.33% of participants were admitted in control group.

Summary

This chapter describes the findings of the study according to the objectives.