Effect of Psycho Education Program on Antipsychotic Drug Compliance

Honey George [1], Chanu Bhattacharya[2], Joshy Abraham[3]

(Msc, Nursing) [1]
(Professor, Father Muller college Of Nursing, Mangalore) [2]
(Lecturer, Sultan Qaboos University, Muscat) [3]

Abstract

Background: *Compliance with anti-psychotic medication remains a challenge for the client, family and healthcare providers due to interfering metabolic side effects specially type 2 diabetes mellitus.Due to the lack of awareness about the importance of adhering with antipsychotic medication , and the consequence of noncompliance many patients tend to neglect the antipsychotics for the fear of gaining weight and becoming diabetic, and return to the hospital with exacerbating psychotic symptoms. This makes the patients to be secluded in the mental hospitals for a fair period of lifetime, due to relapse of their psychotic symptoms. Here arise the need for a psychoeducation program for educating the patients and their family members regarding strategies of maintaining both antipsychotics and hypoglycemic agents.*

Objectives: *To compare the compliance status before and after the introduction of psychoeducation program in experimental group I and control group I, To compare the compliance and diabetic status before and after the introduction of psychoeducation program in experimental group II and control group II and To assess the association between the pretest compliance status and selected baseline data of both group 1 and group II.*

Setting: *A selected hospital in Mangalore, Karnataka, India.*

Method: *A quasi experimental design with comparative approach was used, Group I (clients using both antipsychotics and hypoglycemic agents) and group II (clients using only antipsychotics) were compared among themselves with their experimental and control group counterparts.*

Findings: *The findings have shown that there is significant increase in the posttest compliance status of experimental group I and II after psychoeducation program. There is also significant association between the pretest compliance scores and the religion, family income, occupation, monthly expenditure for medicine of the subjects.*

Conclusion: *Patient education services are an integral part of high-quality, cost-effective care. So Nurses may use the study findings to improve the compliance of patients to their antipsychotics by managing its side effects appropriately in their respective areas.*

Keywords: *Antipsychotics; Compliance; Hypoglycemic agents and Psychoeducation*

I. Introduction

Nurses are the primary caregivers of patients admitted to a psychiatric ward and hence providing standardized quality care for a patient with mental illness. Many a times both the patient and relatives are unaware of the importance of continuing psychotropic medication. Failure to take the prescribed medication is thought to be the biggest cause of subsequent relapse and this fact should be made absolutely explicit. The patient may be helped to maintain long term medication compliance if they are fully informed.An extensive review of literature was done to collect maximum relevant information for building up the present study.

A study in Italy clearly states that educational interventions are important tool for the management for weight gain and diabetes among patients receiving AP (antipsychotic) therapy.Nurses are the primary caregivers of patients admitted to a psychiatric ward and hence providing standardized quality care for a patient with mental illness is a challenging task for the psychiatric nurse[1].Canadian diabetes association, clinical practice guidelines expert committee reported that patients with serious mental illnesses, particularly those with depressive symptoms or syndromes, and patients with diabetes share reciprocal susceptibility and a high degree of co morbidity[2]. An analytical study was conducted in Michigan to assess the differential medication adherence among patients with schizophrenia and comorbid diseases like diabetes and hypertension concluded that patients were more likely to havepoorer adherence (MPR less than 8) to their antipsychotics than to their hypoglycemic agents or antihypertensive[3].A quasi experimental study (pre/posttest intervention) with a non-equivalent control group was conducted in a primary care center in Spain, including 72 type 2 individuals with diabetes the beneficial effect of psychoeducational group therapy (PGT) was compared with conventional diabetes education in the control group (CG). The PGT had an increased mean HbA1C reduction met the objectives of optimal

control of HbA1C to a higher degree and a greater mean weight reduction[4]. Chan et al did a study to evaluate the effectiveness of a psychoeducational program for Chinese clients with schizophrenia and their family caregivers concluded that a psychoeducational program that had positive effects on the Chinese clients and their care givers and also recommended that psychoeducation should be an ongoing intervention with its outcome constantly evaluated[5].

II.   Materials and Method

A quasi experimental design with comparative approach was used and the population consists of clients who are exposed to antipsychotic drugs and hypoglycemic agents, who are non-compliant and experiences relapse of psychotic symptoms and the sample size was 70 and random sampling technique was used for sample collection. Patients using both antipsychotics and hypoglycemic agents were 50 and they divided equally as experimental and control group. There were 20patients using only antipsychotics and not hypoglycemic agents, and they were also divided equally in experimental and control group.

The research tool consist ofBaseline Performa for the patients (15 items), structured questionnaire on antipsychotic compliance status for patients under hypoglycemic therapy (20 items) and structured questionnaire on client's compliance status with different antipsychotics (12 items).Test retest method was utilized to find out the reliability of the test. The reliability obtained for the structured questionnaire on antipsychotic compliance status for patients under hypoglycemic therapy was 0.87 and for structured questionnaire on clients compliance status to different antipsychotics was 0.89, which indicates that the instruments are very much reliable. The psychoeducation was developed on medicine, coping with stressors, warning signs of relapse, improving compliance to antipsychotics, impact of medication adherence and follow up on recovery, and practical session which included the diet planning and exercises which was administered to the experimental groups of both group I(clients using both antipsychotics and hypoglycemic agents) and group II(clients using only antipsychotics).

The patients in the group II were screened for their diabetic status by random blood sugar test using a glucometer and both group I and group II were first interviewed for their baseline information. There after compliance status was assessed using the questionnaire for antipsychotic drug compliance. After that a psychoeducation was administered to both experimental group I and experimental group II. The control group I and II were not given this intervention. Thereafter 15 days of discharge, the subjects were tracked during their follow up and again administered with the compliance status questionnaire for experimental and control groups of group I and group II to assess their compliance towards antipsychotic drugs. The researcher obtained formal written permission from administrator of the Hospital, and an approval was also obtained from the institutional ethical committee prior to data collection to conduct the study.

III.   Results

The data were analyzed using both descriptive and inferential statistics on the basis of objectives and hypothesis of the study. The results were organized in terms of frequency, percentage, mean, standard deviation mean percentage, paired t test and fishers exact test. Data analyzed for statistical significance using paired "t" test and hypothesis tested at 0.05 level of significance.Majority of the subjects (36%) in the group I were in the age group of 50-59 years, whereas in group II, majority (40%) were in the age group of 40-49 years and 50-59 year, and in group I, 68% were males and 32% were females, whereas in group II, 60% were female patients and 40% were males(Figure 1). In group I, 24% of subjects were having less than Rs 3000, 24% with 3001-4000rs, 36% Rs. 4001-8000, 12% with 8001-15000 and 4% more than 15000rs as monthly income respectively. In group II, 10% of subjects were having less than Rs. 3000, 60% with Rs. 3001-4000, 30% with 4001-8000rs as their monthly income(Figure 2).
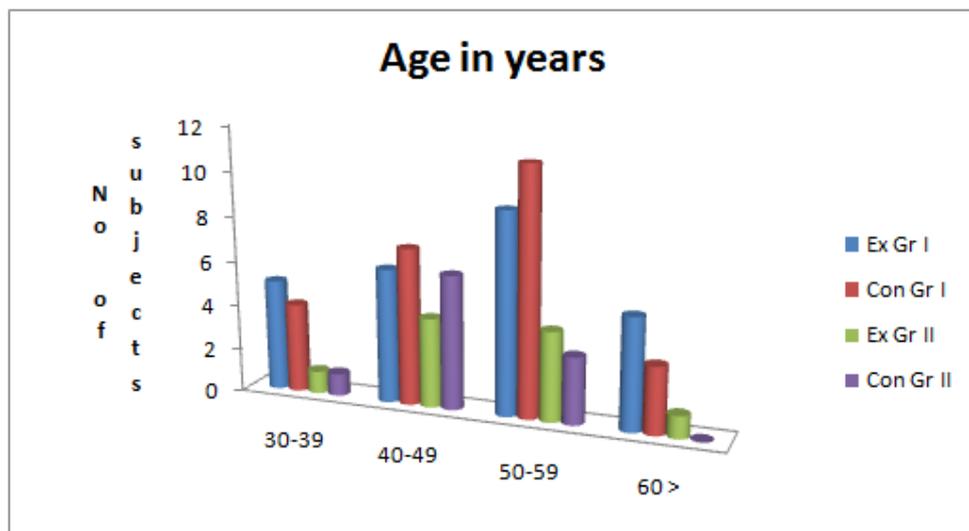
Figure 1: Bar diagram showing distribution of subjects by their age in years
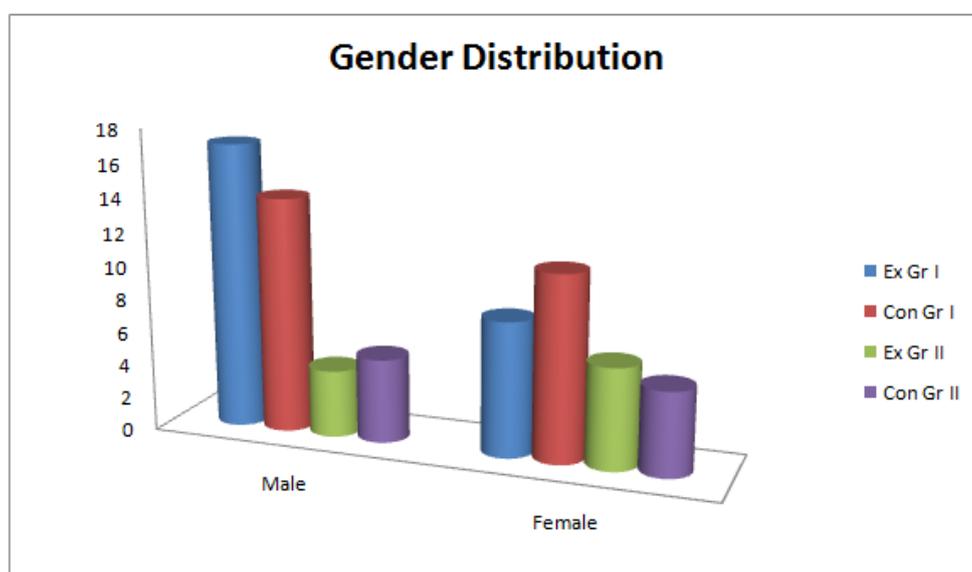

Figure2: Bar diagram showing distribution of subjects according to gender

In group I, 20% of the subjects were diagnosed with diabetes less than one year, 48%, from 1-3 years and 32% were from more than four years (Figure 3). Among the subjects in group I, majority of 32% were under resperidone, 24% were on olanzapine, 20% were in Clozapine, 24% were on queitipine drugs as their antipsychotic agent. In group II, 30% were under resperidone, 30% were on olanzapine, 20% were in Clozapine, 20% were on queitipine drugs(Figure 4). A similar study which was published in the journal of clinical psychiatry concluded that out of 920 subjects, 41% received atypical antipsychotics (e.g. olanzapine, risperidone, quetiapine, ziprasidone, clozapine) and 34% received conventional antipsychotics. A majority of 52% of the subjects in group I were admitted to psychiatric hospital for 5-10 times, and 48% for more than 10 times. There were no patients who were admitted to psychiatric hospital for 1-5 times. Whereas in the group II, 10% were admitted to psychiatric hospital for 1-5times, and 50% for 5- 10 times and 40% for more than 10 times respectively.
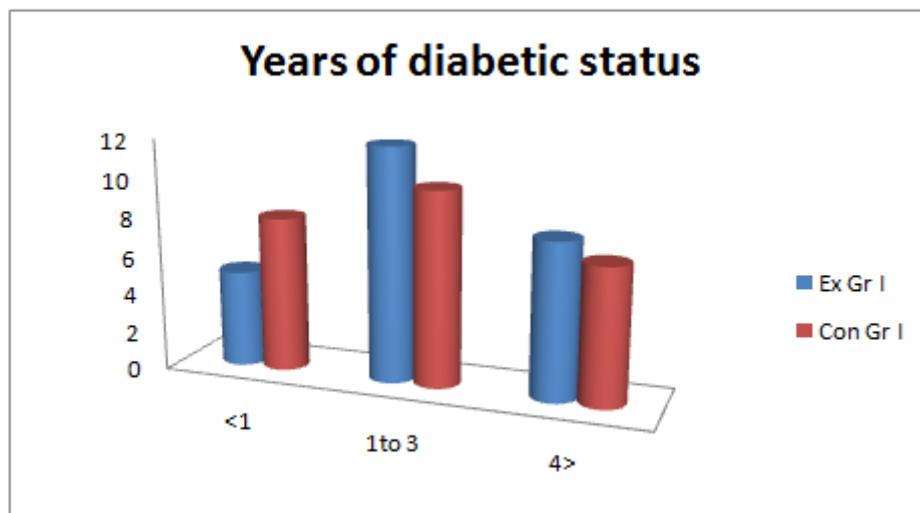
Figure3: Bar diagram showing distribution of subjects according to their years of diagnosis with diabetes
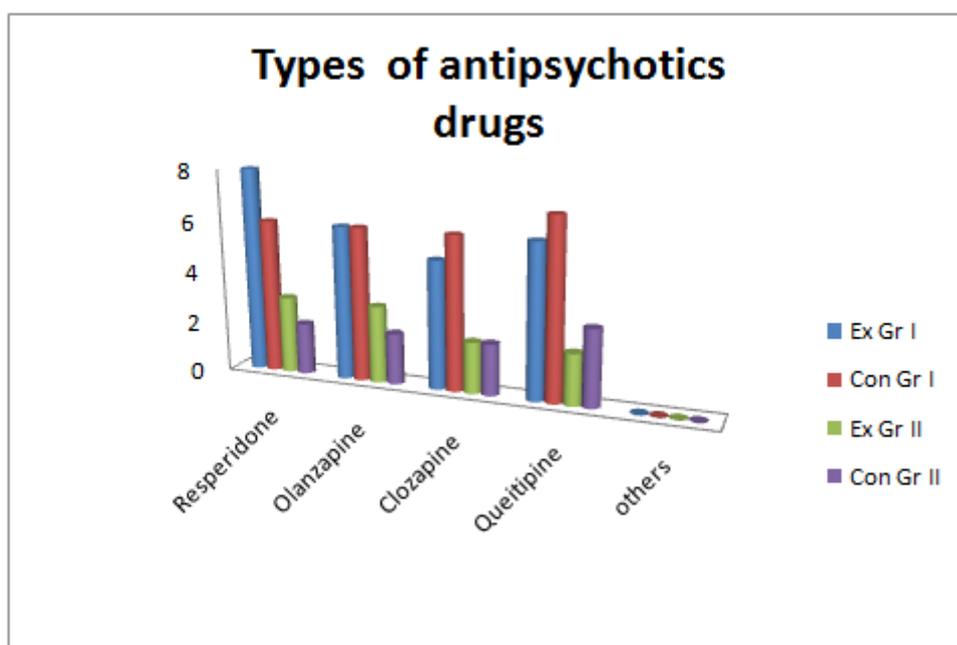

Figure 4: Bar diagram showing distribution of subjects according to the type of antipsychotic drug.

Comparison of the compliance status before and after the introduction of psychoeducation program in experimental group I and control group I(clients using both antipsychotics and hypoglycemic agents).

In the experimental group I, 28% of the subjects were having partial compliance to antipsychotic drugs and 72% were non-compliant. None of the subjects were fully compliant to antipsychotic drugs before introduction of psychoeducation program.

In control group I, 100% were non-compliant to antipsychotic drug before introduction of psychoeducation program. The mean percentage of compliance status in the experimental group I is, 42% and that of the control group is 27% before the introduction of psycho education program.In experimental group I, 72% of the subjects were fully compliant to antipsychotic drugs and 28% were partially compliant after the psychoeducation program. No subject in the experimental group has fallen in to the noncompliance category after the psychoeducation program. Whereas in the control group I, 20% were partially compliant and 80% were noncompliant after the introduction of psychoeducation program. Paired't' test was used to compare the compliance status of the experimental group I where the calculated t value (35.3) was higher than the tabulated t value t(48)=2.01 whereas for the control group I, the calculated t value (1.96) is less than the tabulated t value. This indicates a significant increase in the post test compliance status of experimental group I after the psychoeducation program. The mean percentage of compliance in group I (experimental) is 85.7% whereas that

of control group is 59.1% after the psychoeducation program. The statistical data proves that the research hypothesis can be accepted and null hypothesis can be rejected

Table 1.: Comparison of pretest posttest Mean compliance sores in experimental groupI and control group I (Client using both antipsychotics and hypoglycemic)

Variables	Mean	SD	MD	t value	p value
Experimental Group I					
Pre test	5.8	1.33	0.8	3.75	0.03*
	12.1	0.43			
Post test					
Control Group I					
Pre test	3.7	0.45	------	0,001	1
Post test	3.7	0.48			

N=50

Table 2: Compliance status of experimental group II and control group II (clients exposed to only antipsychotics and not hypoglycemic agents) before and after the introduction of psychoeducation program

Compliance status	Pre Test					Post Test			
	ExGr II	CnGr II	Mean error Ex Gr II- Con Gr II			ExGrII	ConGr II	Mean error Ex - Con (M=6.3)- (M=3.7)	
	S M SD	S M SD	(M=5.4)	(M=3.7)		S M SD	S M SD		
Compliance	0	0							
Partial Compliance	8 5 1.1	3 5.3 0.3	0.4	1.6		9 5.7 0.7	3 5.3 0.3	0.5- 1.6	
Non Compliance	2 4 0	7 3 0.5	1	0.7		1	7 3 0.4	- 0.7	

S -Samle size,M –mean,N =20

Comparison of the compliance status before and after the introduction of psychoeducation program for experimental group II and control group II (clients using only antipsychotics)

Majority of the 80% of subjects in experimental group II were compliant to antipsychotic drug and 20% of the subjects were non-compliant, whereas in the control group II, 70% of the subjects were non-compliant and 30% are compliant to antipsychotic drugs before introduction of psychoeducation program. The mean percentage of compliance status in the group II (experimental group) is 45% and that of the control group II is 37% before the introduction of psychoeducation program. Statistical data also indicated that 60% of the subjects in experimental group II were fully compliant to antipsychotic drug and 40% were partially compliant, whereas in the control group II, 30% were partially compliant and 70% were non-compliant after psychoeducation program. The mean percentage of compliance in the experimental group II is 51.6% and that of control group II is 30.8%. There is significant increase in the posttest compliance scores of experimental group II when compared to control group II which is statistically proved by the paired' test where the calculated't' value of the experimental group II (3.53) is greater than the tabulated't' value $t(18)=2.10$ whereas for the control group II, the calculated t value (1.00) is less than the tabulated 't' value and hence research hypothesis is accepted and null hypothesis is rejected(Table 3).

Association between pretest compliance status and selected baseline data of both group I and group II.

In group I, there was a significant association between the occupation ($p=0.004$) of the subjects and the pretest compliance scores. In group II, a significant association was found between the religion ($p=0.003$), monthly expenditure of medicine ($p=0.002$) and family income ($p=0.003$) of the subjects and the pretest compliance scores(Table 3).

TABLE 3: Association between pretest compliance status with demographic variables of group I (clients exposed to both antipsychotics and hypoglycemic agents)

	Experimental Group I Median= 6			Control Group I Median=5		
	≤6	>6	p value	≤5	5>	p value
Age						
30-39	0	5		2	2	
40-49	3	3	0.371	3	4	1.000
50-59	5	4		5	6	
60>	2	3		1	2	
Gender						
Male	7	10	1.000	7	7	0.698
Famale	3	5		4	7	
Educational Status						
No schooling	1	3		2	5	
Primary	2	3		3	3	
High school	1	7	1.000	1	4	0.153
PUC	4	2		4	0	
Graduate/Diploma	2	0		1	2	
Post graduate	0	0		0	0	
Marital Status						
Married	8	11		7	10	
Unmarried	1	4	0.350	2	1	0.920
Divorced	1	0		1	2	
Widowed	0	0		1	0	
Religion						
Hindu	4	4		3	5	
Islum	1	4	1.000	2	3	0.927
Christian	2	6		5	6	
Other	3	1		1	0	
Occupation						
Unskilled	2	1				
Skilled	3	4	0.004*	1	4	0.134
Agriculture	4	6		1	5	
Business	1	3		6	3	
Professional	0	1		3	1	
				0	1	
Mother tongue						
Kannada	5	8		5	7	
English	0	0	0.734	0	0	0.280
Malayalm	0	0		0	0	
Other	5	7		5	8	
Family income						
<3000	1	5		4	2	
3001-4001	2	4	1.000	4	6	
40001-8000	5	4		3	4	0.772
8001-15000	2	1		0	1	
>15000	0	1		0	1	
Diabetic status						
Diabetic	4	6		7	5	
Non Diabetic	6	9	0.078	5	8	0.695
Duration of diagnoses						
<1yr	1	0		2	6	
1-3yrs	5	7	0.056	6	5	0.432
≥4	4	8		4	2	
Types of Antidiabetic agent Glycomet						
Metformin	1	4		2	6	
Glipizide	2	5	0.007	5	5	0.006
Any other	5	6		1	3	
	2	0		2	1	
No of time admission in psychiatric hospital						
1-5	2	0		2	6	
5-10	4	7	1.000	6	5	0.287
>10	4	8		3	8	
Monthly medicine cost <500INR						
500-1000 INR	0	0		0	0	
>1000 INR	5	8	1.000	5	6	0.654
	5	7		8	6	
Types of antipsychotics Resperidone						
Olanzapine	2	5		4	3	

Clozapine	3	5		4	6	0.820
Queitipine	5	5	1.000	3	4	
Any other	0	0		1	1	
	0	0		0	0	
Presence of psychiatric illness in family relation						
	3	7		2	8	
None	2	3		4	2	
Parents	4	1		3	1	0.753
Siblings	1	2	0.876	0	2	
Grandparents	0	0		1	0	
First degree relatives	0	2		0	2	
Children						

IV.   Discussion

This study intends to find the effect of psychoeducation program on drug compliance among the clients exposed to antipsychotics and hypoglycemic agents. The present study showed that none of the subjects were fully compliant to antipsychotic drugs before introduction of psychoeducation program.In the control group I, 100% were non-compliant to antipsychotic drug Nobefore introduction of psychoeducation program. The mean percentage of compliance status in the experimental group I is, 42% and that of the control group is 27% before the introduction of psychoeducation program. The present study findings are greater than that of another studies, among the psychiatric patient population, the literature revealed that, again, rates differed according to the type of disease. In a study conducted to estimate medication compliance in patients with schizophrenia or schizoaffective disorder, the mean compliance rates were (63%) for the first month and ranged from (56%) to (45%) over the next five months. The poor compliance with medication has been reported in up to 40% of outpatients with schizophrenia[6].

In the experimental group I, 72% of the subjects were fully compliant to antipsychotic drugs and 28% were partially compliant after the psychoeducation program. No subject in the experimental group has fallen in to the noncompliance category after the psychoeducation program. Whereas in the control group I, 20% were partially compliant and 80% were noncompliantafter the introduction of psychoeducation program. Paired't' test was used to compare the compliance status of the experimental group I where the calculated t value (35.3) was higher than the tabulated t value $t_{(48)}=2.01$ whereas for the control group I, the calculated t value (1.96) is less than the tabulated t value. This indicates a significant increase in the post test compliance status of experimental group I after the psychoeducation program. The presented findings can be supported by another study, which was conducted by the SPERA group, which states that psychoeducation program proves effective in improving adherence to pharmacotherapy and reducing relapses and readmissions, its application could be proposed as a standard adjunctive psychosocial treatment[7].

Majority of the 80% of subjects in experimental group II were partially compliant to antipsychotic drug and 20% of the subjects were non-compliant, whereas in the control group II, 80% of the subjects were non-compliant and 20% are partially compliant to antipsychotic drugs before introduction of psychoeducation program. The mean percentage of compliance status in the group II (experimental group) is 45% and that of the control group II is 30% before the introduction of psychoeducation program. A study conducted in Shiraz, Iran among 108 patients, divided equally into two groups, were randomly assigned to receive either pharmacotherapy alone (control group) or psycho-education along with pharmacotherapy treatment (intervention group). The result of this study indicates that patients in the "intervention" group had a statistically significant enhancement in medication compliance ($p = 0.008$). This study greatly supports the results of the present study[8].

Statistical data also indicated that 60% of the subjects in experimental group II were fully compliant to antipsychotic drug and 40% were partially compliant, whereas in the control group II, 20% were partially compliant and 80% were non-compliant after psychoeducation program. The mean percentage of compliance in the experimental group II is 51.6% and that of control group II is 30.8%. There is significant increase in the posttest compliance scores of experimental group II when compared to controlgroup II which is statistically proved by the paired' test where the calculated 't' value of the experimental group II (3.53) is greater than the tabulated 't' value $t_{(18)}=2.10$ whereas for the control group II, the calculated t value (1.00) is less than the tabulated 't' value. A quasi experimental design study conducted in the National university of Singapore with fifty five schizophrenic inpatients concluded that the patients in the experimental group reported a significantly more positive attitude toward medication than those in the control group ($p<0.05$)[9].

In group II, there was a significant association between the religion ($p=0.003$), monthly expenditure of medicine ($p=0.002$) and family income ($p=0.003$) of the subjects and the pretest compliance scores. A study conducted in Ghana and published in Biomed Central, examined the interrelationship between spirituality/ religiosity and medication adherence among 400 hypertensive patients 18 years old and above. The majority (93.25%) of patients poorly adhered to their medications and suggested that while spirituality/ religiosity was

dominant among hypertensive patients, these spiritual attachments of patients with a supreme being potentially increased their trust in the expectation of divine healing instead of adhering adequately with their anti-hypertensive medications[10].

A congruent association between monthly expenditure of medicine and compliance status was evident in a study conducted by Matsui D, in London evaluating the cost of medications and adherence concluded that, the cost of medications may play a role in whether patients do or do not take their medication with increased cost sharing leading to poorer adherence with prescription drugs[8].

V.   Conclusion

The main aim of the study was to assess the effect of psychoeducation program on drug compliance among the clients exposed to antipsychotics and hypoglycemic agents.Patient medication non-adherence especially to psychotropic drugs is a major challenge globally which leads to the relapse of the psychotic symptoms and stagnation of patients with in the walls of the hospitals.. The nurse provides education to the patient and family members by clearly communicating the strategies and ways in which they can maintain their blood glucose levels. This enables the patients to be adherent to their antipsychotic medication without fearing the complications of diabetes mellitus.The antipsychotic medication induces increased appetite and craving for carbohydrate diet thereby resulting in weight gain. Although estimates of non-adherence vary widely depending on sample, stage of illness methodology used to assess the adherence and duration of follow up a recent review article estimated that 41% of patients using antipsychotics are non-compliant due to various reasons in which one of the major issue is of its side effects.

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