

RESERACH

Effectiveness of educative intervention on drug compliance for patients with schizophrenia

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Abstract

Background: The maintenance of antipsychotic treatment has been shown to play a vital role in relapse prevention and improving the quality of life of individual with schizophrenia. Noncompliance is a major cause of schizophrenia relapses. Aim of the study was to find the effectiveness of educative intervention on drug compliance for patients with schizophrenia.

Material and methods: A quasi experimental research design was used for this study. Population consists of entire patients with schizophrenia admitted with more than one year of illness duration. Total 100 samples were assigned into two groups with 50 in control and 50 in experimental group. A sociodemographic data sheet and a tool on drug compliance consisting of 25 items were used for the study. The tool measures patients' perception and behaviour related to compliance. Educative intervention on drug compliance focused on educative sessions on knowledge about the illness, need of medication, side effect of medication and their management and attitude towards medication and illness.

Results: There was a statistically significant difference in pre and post test scores in both the control and experimental group indicating some degree of improvement on routine care without added intervention. But a statistically significant difference in post test mean scores on drug compliance between the control and experimental group indicated effectiveness of educative intervention for patients with schizophrenia. The educative intervention was helpful in bringing a change towards perception and behaviour related to taking medicine.

Conclusion: The findings concluded that educative intervention on drug compliance is useful for better outcome in compliance of schizophrenic patients.

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Introduction

Schizophrenia is a clinical syndrome of variable but profoundly disruptive psychopathology that involves cognition, emotion, perception and other aspects of behaviour. The effect of the illness is always severe and usually long lasting.[1] Treatment with antipsychotic medicines and psychosocial interventions can help people with schizophrenia lead productive lives. The maintenance of antipsychotic treatment has been shown to play a vital role in relapse prevention and improving the quality of life of affected individual. But still it is seen that the risk of relapse is five times higher when individual does not take their antipsychotic medications than those who are compliant to medications.[2] There is overwhelming evidence from research that patients with schizophrenia stop taking medication, miss clinical appointments, fail to report essential information to their psychiatrists and choose not to participate in recommended treatment.[3]

Therefore noncompliance is a major cause of schizophrenia relapses. The reason for taking or not taking medicine are complex and include illness-related factors, treatment related factors, patient related factors and social or cultural factors.[4] It could be viewed in the light of lack of awareness or knowledge deficit towards the illness.

The psychoeducational approaches are useful as part of a treatment program and should be made available to all patients and their families suffering from schizophrenia disorders.[5] A more structured and prolonged psychoeducational treatment for patients and their families seems to be more effective in the long run which facilitate schizophrenia patients to gaining the necessary skills to effectively manage a drug treatment regime, reduce risk of relapse and rehospitalisation and which might lead to improvement in quality of life and social and occupational functioning.

Review: Pushpa *et al.*[6] conducted a study with the aim to assess the efficacy of psychoeducation with the patients of schizophrenia. The sample consisted of 40 schizophrenia patients (20 patients in the treatment group and 20 in the control group) diagnosed as per the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Pre-assessment of both groups was done for positive and negative symptoms using scales for the assessment of positive and negative symptoms. Behaviour checklist was used to assess the daily functioning of the patients. The experimental group underwent psychoeducation along with pharmacotherapy and control group received only pharmacotherapy. Post assessment was done after one month. Comparison of treatment and control group was done for pre and post treatment scores. The experimental group showed significant improvement in comparison to control group in negative symptoms. Significant improvement was noticed in insight and drug compliance.

Chan *et al.*[7] did a study to evaluate the effectiveness of a psychoeducation program for Chinese clients with schizophrenia and their family caregivers. Seventy three clients with a diagnosis of schizophrenia and their caregivers were recruited and randomised into a study (n=36) and control group (n=37). Ten psychoeducation sessions were provided to the study group. The outcomes were measured at the baseline, immediately after (post-one), six months (post-two) and 12 months after the intervention (post-three). The results revealed that there were significant treatment effects across time for all client outcomes: adherence to medication ($p<0.01$), mental status ($p<0.01$) and insight into illness ($p<0.01$). However no significant differences were found between groups at the post-three measures for all client outcomes. For the caregivers, significant group differences were only detected in self-efficacy at the post-one ($p=0.007$) and post-two ($p<0.001$) measures, the level of satisfaction at the post-one ($p=0.033$) and post-two ($p<0.021$) measures and the perception of family burden at the post-two measures ($p=0.043$). The researchers concluded that a psychoeducational intervention had positive effects on Chinese clients and their caregivers and also recommended that psychoeducation should be an ongoing intervention with its outcomes constantly evaluated.

Degmecić *et al.*[8] conducted a study with the aim to define whether there are differences in the compliance and social functioning between two groups of patients, one who went through education about schizophrenia and its treatment and the other group without the education about the disease. Group of 30 patients during the hospitalisation were educated about the schizophrenia and the treatment of the disease while the control group of 30 patients were not educated. On the admission to the hospital, on the

release from the hospital and after three months from the release from the hospital, patients were rated with Brief Psychiatric Rating Scale and Clinical Global Impression, compliance was rated with Compliance Assessment Inventory, attitude towards drugs with Drug Attitude Inventory and social functioning of the patients with Global Assessment of Functioning. Knowledge about the disease was assessed with specially designed questionnaire with 12 questions. The results showed the importance of education on the compliance as well on the positive attitude towards the drug treatment. Evidence from trials suggested that psychoeducational approaches are useful as a part of the treatment programme for people with schizophrenia and related illness.

Pitschel *et al.*[9] conducted a study to examine whether psychoeducational groups for patients with schizophrenic disorders and for their families can reduce rehospitalisation rates and improve compliance. They selected 236 inpatients who met the revised third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) criteria for schizophrenia or schizoaffective disorder and who had regular contact with at least one relative or other key person were randomly assigned to one of two treatment conditions. In the intervention condition, patients and their relatives were encouraged to attend psychoeducational groups over a period of four to five months. The patients' and relatives' psychoeducational programs were separate and each consisted of eight sessions. Patients in the other treatment condition received routine care. Outcomes were compared over 12-month and 24-month follow-up periods. The study was conducted from 1990 to 1994. The result found a significant reduction in the rehospitalisation rate after 12 and 24 months in patients who attended psychoeducational groups compared with those receiving routine care ($p<.05$). Patients who attended psychoeducational groups showed better compliance than patients under routine care without psychoeducation. So the results suggested that a relatively brief intervention of eight psychoeducational sessions with systematic family involvement in simultaneous groups can considerably improve the treatment of schizophrenia.

The literature reviewed on the effectiveness of psychoeducation gives an overview that one of the ways to improve drug compliance is to know crucial factors responsible for poor drug compliance so that proper management strategies may be planned to improve patient's drug compliance. Interventions to improve adherence includes optimising pharmacotherapeutic treatments by incorporating psychosocial strategies, continuous support and active involvement of caregivers in supervising drug intake at home. Participation in psychoeducational programs can help patients as well as their caregiver to understand schizophrenia, may improve

their attitude towards treatment, can improve adherence, decrease rates of relapse and rehospitalisation.

Methodology

The present study aimed at finding the effectiveness of educative intervention on drug compliance for patients with schizophrenia. A quasi experimental research design was used for this study. Population consists of entire patients with schizophrenia admitted to the Lokopriya Gopinath Bordoloi Regional Institute of Mental Health (LBGRIMH), Tezpur with more than one year of illness duration. Total 100 samples were assigned into two groups that is 50 in control and 50 in experimental group. LBGRIMH is a tertiary care mental health setup.

Data were collected following obtaining the permission from authority during the second half of year 2010. A sociodemographic data sheet and a tool on drug compliance were used for the study. Schizophrenia patients in both the groups were given pre test on the drug compliance tool during the following week of admission to the hospital. The patients in control group were followed up on routine medical and nursing care for four weeks and then drug compliance tool was readministered. Patients assigned in experimental group were exposed to educative intervention following pre test apart from routine medical and nursing care. Post test data on drug compliance was collected after four weeks.

A self-developed drug compliance tool was used which measures the patients' behaviour of refusal of medication and the knowledge/reasons for noncompliance. Drug compliance for the tool is defined as the implementation/adherence of therapeutic plans by the patients, perception of medication and compliant behaviour. The tool consists of two parts: part A and B. Part A is an interview schedule on drug compliance consisting of 17 items. Items in the part A focuses on patients' perception or feeling towards medications such as 'do you feel that you need to take medicine regularly' (item one) or 'are you willing to continue medication' (item five) and so on. Part B consists of eight items for observation check list focusing on behaviour related to taking medication such as willingly take medication (item one), needs persuasion (item three) etc. Combined scoring is done for both the parts and score ranges from zero to

Table 1. Distribution of schizophrenia patients in control and experimental groups on age, sex, education, occupation and religion

Variables		Groups				Level of significance
		Control		Experimental		
		Frequency	Percentage	Frequency	Percentage	
Age	20-29years	16	32	22	44	$\chi^2 = 1.927$ df=2 NS
	30-39years	23	46	21	42	
	40-50years	11	22	7	14	
Gender	Male	38	76	37	74	$\chi^2 = 0.53$ df=1 NS
	Female	12	24	13	26	
Education	Primary	8	16	4	8	$\chi^2 = 1.84$ df=4 NS
	Middle	9	38	19	38	
	HSLC	10	20	13	26	
	HSSLC	9	18	9	18	
	Graduation	4	8	5	10	
Occupation	Cultivation	15	30	10	20	$\chi^2 = 10.34$ df=4 S
	Service	6	12	0		
	Business	3	6	2	4	
	Others	2	4	6	12	
	Nil	24	48	32	64	
Religion	Hindu	37	74	38	76	$\chi^2 = 1.52$ df=2 NS
	Muslim	8	16	10	20	
	Christian	5	10	2	4	

25. Reliability for part A was found to be $r(18)=0.715$ and part B is $r(18)=0.995$. Content validity was obtained for the tool against the criteria of relevancy, appropriateness and adequacy.

Educative intervention on drug compliance focused on educative sessions on knowledge about the illness, need of medication, side effect of medication and their management and attitude towards medication and illness. Following the pre test, educative intervention was administered in two sessions.

The collected data were analysed by using the Statistical Package for Social Sciences (SPSS) version 9.

Results

The findings from the table 1 showed that majority of the samples in the control group ($n=23$) were from the age group of 30-39 years i.e. 46% and in the experimental group ($n=22$) were from the age group of 20-29 years i.e. 44%. The gender distribution showed that majority of the sample in the control group ($n=38$) were male constituting 76% and in the experimental group ($n=37$) were also male comprising of 74%. The educational status of the samples depicted that majority of them in the control group ($n=9$) were educated up to middle level i.e. 38% and the samples of the experimental group depicted that ($n=19$) i.e. 38% were also educated up to middle level. The occupational status of the samples showed that majority of them in the control group ($n=24$) were unemployed i.e. 48% and the samples in the experimental group ($n=32$) were also unemployed i.e. 64%. The religious status of the samples depicted that in the control group ($n=37$) i.e. 74% belonged to Hindu religion and in the experimental group

majority of the sample (n=38) i.e. 76% belonged to Hindu religion.

Table 2 showed that in respect of drug compliance, there was no statistically significant difference between the control and the experimental groups' pre test scores [$t(98)=0.82$, $p>0.05$]. It indicated equities between the groups on the variable at pre test level. The table also showed that in respect of drug compliance, there was statistically significant difference in post test scores between the control and the experimental groups [$t(98)=22.6$, $p<0.05$]. This observation indicated better gain in comparison to control group showing the efficacy of educative intervention in schizophrenic patients.

intervention focused on knowledge about the illness, need for medication which might have brought a hike in compliant behaviour of patients in comparison to control group. Another study done by Chaityajan *et al.*[11] to examine the effectiveness of psychoeducation is consistent with the present study. The result revealed that the patients in the experimental group reported a more positive attitude towards medication than those in the control group ($p<0.05$) and the experimental group presented a higher proportion of patients attending the first appointment after discharge than the control group ($p<0.05$). The finding suggests that the psychoeducational program should be utilised in the discharge plan in order to promote a

Table 2. Mean, mean difference, standard deviation, standard error of mean and 't' value of pretest and posttest drug compliance scores of schizophrenia patients in control and experimental groups

Test	Groups	Mean	MD	SD	SE _M	't' df=98	P(2-tailed)
Pretest	Control	5.3	0.32	1.9	0.28	0.82	0.413
	Experimental	5.6		1.9	0.27	NS	
Posttest	Control	7.5	10.3	2.8	0.40	22.6	0.00
	Experimental	17.9		1.5	0.20	S	

Table 3 showed statistically significant difference between pre and post test drug compliance scores in the control group [$t(49)=4.4$, $p<0.05$]. These observations were expected as the subjects were on medication as indoor patients. This also displayed a statistically significant difference between pre and post test drug compliance scores in the experimental group [$t(49)=39.4$, $p<0.05$]. This observation indicated the effectiveness of medical and psychosocial intervention.

Discussion

The present study aimed at finding the effectiveness of educative intervention on drug compliance for patients with schizophrenia. The result of the present study has kept consistent with the findings of a study done by Magliano *et al.*[10] where significant improvement was found in insight after the psychoeducation programme ($p<0.001$). So the researchers concluded that psychoeducation was an important tool in improving insight into illness among patients with schizophrenia. Better compliance is achieved through positive perception towards the illness and the treatment. The educative

positive attitude towards medication and to promote compliance with the first appointment after discharge. Result showed a significant difference in pre and post test in control group also. It might be interpreted from routine care in the hospital. Better compliance leads to quality of life, to achieve this apart from routine care added interventions are required. Axelord & Wetzler[12] have reported that information regarding need for medication led to improvement in drug compliance.

Similarly a study conducted by Cheng & Chan[13] found that the experimental group had more improvement on their perception of burden of care ($t=5.25$, $p<0.01$), self-efficacy ($t=-7.16$, $p<0.01$) and social support ($t=-5.61$, $p<0.01$) followed by psychoeducation. This study supports psychoeducation as an effective nursing intervention for Chinese patients and their family carers.

The findings of the present study can also be compared to the findings of the study done by McWilliams *et al.*[14] who concluded with the result that after psychoeducational program the attitudes to treatment improved significantly overall ($p<0.001$), an improvement

Table 3. Mean, mean difference, standard deviation, standard error of mean and 't' value of pre and posttest drug compliance scores of schizophrenia patients in control groups

Variable	Group	Test	Mean	MD	SD	SE _M	't' df=49	P value
Drug Compliance	Control	Pretest	5.2	2.2	2.8	0.4	4.4	0.00
		Posttest	7.5		1.9	0.2	S	
	Experimental	Pretest	5.6	12.3	1.9	0.27	39.4	0.00
		Posttest	17.9		1.4	0.20	S	

most marked in terms of attitudes to health and illness, attitudes towards the physician and attitudes towards the potentially harmful effects of treatment.

The present study has the limitation as the indoor patients with schizophrenia were selected for the study. Delimitation of the study was also imposed on more than one year of illness duration. Generalisation of the study findings is restricted due to small sample size. Self-developed structured tool was used to measure compliance which was not compared against standardised tool on compliance. The study assessed the improvement in compliance through post test after one month but sustenance of compliance behaviour or follow up is not known.

Conclusions

Poor adherence to treatment is a major issue in schizophrenia. Good medication adherence generally contributes to an improvement in the clinical outcome which leads to a reduced rate of rehospitalisation and a higher rate of employment and recovery. Strategies to improve medication adherence include nonpharmacologic interventions such as encouraging patient participation in psychoeducation programs, involving family members in the treatment process and forging a close therapeutic relationship with the patient. Hence it can be considered that psychoeducational intervention has an effective impact in improving the attitude towards medicine and treatment adherence and reduce rehospitalisation. Mental health professional with sound knowledge and expertise skills can be actively involved in the intervention and also can evaluate the effectiveness by taking on research activity.

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References

1. Sadock BJ, Sadock VA. Kaplan & Sadock's synopsis of psychiatry: behavioral sciences/clinical psychiatry. 10th ed. New York: Lippincott Williams & Wilkins; 2007.
2. Boardman GH, McCann TV, Clark E. Accessing health care professionals about antipsychotic medication related concerns. *Issues Ment Health Nurs*. 2008;29:739-54.
3. Ali W, Maqsood N, Rehman W. Schizophrenia and drug non-compliance. *J Indian Acad Appl Psychol*. 2005;31:24-8.
4. Taylor D, Paton C. Case studies in psychopharmacology: the use of drugs in psychiatry. 2nd ed. London: Martin Dunitz; 2002.
5. Pekkala E, Merinder L. Psychoeducation for schizophrenia. *Cochrane Database Syst Rev*. 2000;(4):CD002831.
6. Pushpa, Prasad D, Hemron S, Jahan M, Verma AN, Singh AR. Efficacy of psycho-education with the patients of schizophrenia. *Eastern Journal of Psychiatry*. 2009;12:37-40.
7. Chan SW, Yip B, Tso S, Cheng BS, Tam W. Evaluation of a psychoeducation program for Chinese clients with schizophrenia and their family caregivers. *Patient Educ Couns*. 2009;75:67-76.
8. Degmecić D, Pozgain I, Filaković P. Psychoeducation and compliance in the treatment of patients with schizophrenia. *Coll Antropol*. 2007;31:1111-5.
9. Pitschel-Walz G, Bäuml J, Bender W, Engel RR, Wagner M, Kissling W. Psychoeducation and compliance in the treatment of schizophrenia: results of the Munich Psychosis Information Project Study. *J Clin Psychiatry*. 2006;67:443-52.
10. Magliano L, Fiorillo A, Fadden G, Gair F, Economou M, Kallert T, *et al*. Effectiveness of a psychoeducational intervention for families of patients with schizophrenia: preliminary results of a study funded by the European Commission. *World Psychiatry*. 2005;4:45-9.
11. Chaiyajan W, Sitthimongkol Y, Yuttatri P, Klainin P. Effects of a psychoeducational program on attitude towards medication and compliance with first appointment after discharge in schizophrenic patients. *Journal of Nursing Sciences*. 2009;27:73-81.
12. Axelrod S, Wetzler S. Factors associated with better compliance with psychiatric aftercare. *Hosp Community Psychiatry*. 1989;40:397-401.
13. Cheng LY, Chan S. Psychoeducation program for chinese family carers of members with schizophrenia. *West J Nurs Res*. 2005;27:583-99.
14. McWilliams S, Hill S, Mannion N, Kinsella A, O'Callaghan E. Does psychoeducation influence carers' attitudes to treatment of schizophrenia? *Ir J Psychol Med*. 2007;24:27-30.

Appendix

Tool on drug compliance

Part – A: Title: Interview schedule on drug compliance

Purpose: To assess the reasons and knowledge related to drug noncompliance

Instruction: Following are few questions related to your medication. Please tick (✓) on ‘yes’ or ‘no’ after readout the statement.

1. Do you feel that you have to take medicine regularly?
2. Do you feel that the medication that you are taking is not making you feel better?
3. Do you believe that taking the medication is not letting you to think clearly?
4. Do you believe that because of the medication you are having disturbed sleep?
5. Are you willing to continue the medication?
6. Are you aware that stopping your medication may cause relapse of your illness?
7. Do you want to stop medication because you feel you will be looked down in the family?
8. Do you have any information regarding your medication?
9. Do you feel like not taking the medication because of disturbed side effects?
10. Do you feel that taking the medication for long time will lead permanent damage on you?
11. Do you feel like not taking medication, as you really don't have any mental illness?
12. Do you think that you need medication after your symptoms get recovered?
13. Do you want to stop medication and take treatment from traditional healer?
14. Do you need some clarification regarding your medication?
15. Do you feel that there is a need for regular checkup following discharge from the hospital?
16. Do you feel like stop the medication, as it is more expensive?
17. Do you not want to take medication because of more dose frequency?

Part – B: Title: Observation check list for drug compliance

Instruction: Please place a tick (✓) on either ‘yes’ or ‘no’ based on the observation for last three days.

1. Willingly takes medication
2. Refuses to take medication
3. Needs persuasion to take medication
4. Keeps the tablets inside the mouth for longer time
5. Has to remind the medication time
6. Ask for more medication
7. Refuses to take more than two tablets at a time
8. Wants to know about side effects of the medications