Research Paper

Impact of Drug Non-adherence on Individuals with Schizophrenia and their Family

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ABSTRACT

Introduction: The study regarding poor adherence to medications in schizophrenic patients, a report was done by the World Health organization submitted in 2003 that report shows schizophrenic patients were found to be the most non-adherent 75.7% the difference between the findings may be due to the coverage of sampling. The World Health organization report also shows that based on the MARS (Medication Adherence Rating Scale), out of total respondents, half of them (50.2%) were found non-adherent to their medication. The relative risk of residence on adherence odd ratio equals 0.962 (95% CI; 0.766–0.206) for rural areas and the odds ratio equals 1.058 (95% CI; 0.765–1.463) for urban. **Aim:** To assess the impact of Drug Adherence of individuals with schizophrenia on psychopathology and their family functioning. **Methodology:** It was a hospital-based study using a descriptive research design with 60 chronic schizophrenia patients have been selected by the purposive sampling method. The schizophrenia patient and his caregiver have been assessed in the outpatient department at the Department of Psychiatry and Maharashtra Institute of Mental Health Pune. The data has been collected by direct personal interviews of patients and family members that scales used for this study were self-prepared socio-demographic datasheet McMasters Family Functioning Scale, PANSS, and MARS. The procedure was applied to their caregivers giving informed cons were as selected for the study. After data collection statistically analysis using SPSS results have been arranged in tables. **Results:** Study findings suggested poor drug adherence associated with psychopathology and family functioning of the patients. **Conclusion:** The present study shows that if the medication adherence is good then the family functioning of the family will be good. If the medication adherence is good, then most of the patients had no impairment in their positive symptoms.

Keywords: Medication Adherence, family functioning, Schizophrenia

INTRODUCTION

The study regarding poor adherence to medications in schizophrenic patients, a report was done by the World Health organization submitted in 2003. The presence of one of these symptoms, in the absence of intoxication, brain injury, or clear affective illness, was sometimes taken as sufficient for making the diagnosis of schizophrenia (Hoenig, 1982). Psychotic disorders are commonly associated with general medical comorbidity (Marder et al, 2004). that report shows schizophrenic patients were found to be the mostly non-adherent 75.7% the difference between the findings may be due to the coverage of sampling. The World Health organization report also shows that based on the MARS (Medication Adherence Rating Scale), out of total respondents, half of them (50.2%) were found non-adherent to their medication. The relative risk of residence on adherence odd ratio equals 0.962 (95% CI; 0.766–0.206) for rural areas and the odds ratio equals 1.058 (95% CI; 0.765–1.463) for urban. This implies that being from a rural area had a slight risk to be non-adherent even though beaning an urban resident had no association with adherence Barkhof, et al., (2013) The patients between the ages of 18 to 49 years old had an adherence rate below 50% whereas those above

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49 years had an adherence rate of 65%. Correlating adherence with psychiatric disorders, schizophrenic patients were found to be the most non-adherent (75.7%) whereas bipolar disorder accounts for the least (37.5%).

McFarlane et al (2003) found in their study that family psycho-education as a treatment for schizophrenia was developed 40 years ago almost simultaneously and independently by researchers who were not family therapists at the time. Although the original goal was to decrease highly expressed emotion as a means of preventing relapse, subsequent variations have gone further to focus on social and role functioning and family well-being. Clearly, rejecting the statements that relatives' pathology caused relapses and worsening, family psycho-education looks to engage family members as more elegant partners, supplementing clinician interventions with specialized interactions and coping skills that counteract inherent neurological deficits to the disorder. It has proven to be one of the most consistently effective treatments available.

The study was done by Lacro, et al. (2002) and shows that non-adherence, as measured by the MARS scale (Thompson et al, 2000), was noted in 46% of the participants. Non-adherence to antipsychotic medications is estimated to be nearly 50% but varies worldwide depending on sample size inclusion and exclusion criteria etc.

Lack of adherence to medication adherence among people with schizophrenia is due to a variety of factors including lack of knowledge, psychopathology, substance use disorder, etc. Acosta et al., (2007) In this population, non-adherence is difficult as it can lead to an increase in symptoms, causes relapse, and, result in re-hospitalization. It has been observed that there is a significant relationship between Medication adherence and Family functioning Byerly et. al., (2007).

This study covers the effect of medication adherence on the family functioning of a schizophrenic patient. Chan, S. et. al., (2009). The study also covers the consequences of non-adherence to medication on the psychopathology of schizophrenic patients.

Aim: To assess the impact of drug non-adherence of individuals with schizophrenia on psychopathology and their family functioning.

Objectives:

To assess the psychopathology of Schizophrenic patients.

To assess the drug adherence of Schizophrenic patients.

To assess the family functioning of Schizophrenic patients.

To assess the impact of drug non-adherence on psychopathology and family functioning.

METHODOLOGY

Research Design: It was a hospital-based study using a descriptive research design with 60 chronic schizophrenic patients have been selected by the purposive sampling method. The schizophrenic patient and his caregiver have been assessed in the outpatient department at the Department of Psychiatry and Maharashtra Institute of Mental Health Pune. The data has been collected by direct personal interviews with patients' family members that scales used for this study were self-prepared socio-demographic datasheet Mc Masters Family Functioning Scale (Epstein at al., 1983) PANSS (Kay, Fiszbein, & Opler,1987), and MARS (Thompson et al, 2000). The procedure applied to caregivers giving informed consent was selected for the study. Then patients and family members' given psycho-educated about illness and selected scales will be applied for this study. After data collection using SPSS statistical analysis methods for data analysis results have been arranged in tables.

RESULTS

Table 1. Social-demographic Profile of Schizophrenia patients

Variables		No. of Patients	%
Age	18-25	26	43.3%
	26-35	21	35.0%
	36-45	13	21.7%
Gender	Male	23	38.3%
	Female	37	61.7%
Marital status	Single	17	28.3%
	Married	33	55.0%
	Divorced	3	5.0%
	Widow	6	10.0%
	Separated	1	1.7%
Education	Illiterate	12	20.0%
	Primary	16	26.7%
	Secondary	21	35.0%
	HSC	4	6.7%
	Graduate	5	8.3%
	Post Grad	2	3.3%
Occupation	Farmer	2	3.3%
	Business	4	6.7%
	Professional	1	1.7%
	Housewife	22	36.7%
	Student	2	3.3%
	Other	29	48.3%
Family Type	Joint	28	46.7%
	Nuclear	32	53.3%
No. of Hospitalization	1 Time	15	25%
	2 Times	15	25%
	≥ 3 times	30	50%

Table 1 is showing Socio-demographic variables of Schizophrenic patients, Researcher has taken a total of 60 patients out of this maxim of 26 (43.3 %) patients ware age group of 18 to 25 years -minimum 13of (21.7%)patients were e from age group 36 to 45 years that means it indicates that maximum patient participated in this study were from years 35 years' age gender- wise distribution maxim off um 37(61.7 %) patients were female and 23 (38.3 %) patients were male which's it indicates that maximum patient participated in this study were female. As per Marital Status, wise distribution maximum of 33 (55.0 %) patients were married 01 (1.7%) patient was separated from /her spouse means it which dictates that a maximum participated in this study were married. As per Education, wise distribution maximum of 21(35.0 %) patients were educated up to secondary school and a minimum of 02 (3.3%) patients were educated up to postgraduate which means it indicates that the maximum participants in this study were educated up to secondary school. As per occupation distribution maximum of 22 (36.7 %) patients were housewife and a minim of 01 (1.7 %) patient was professional by occupation which means it indicates the maximum number of patients who participated in this study were housewife. As per family type-wise distribution a maximum of 32 (53.3%) patients were living in a nuclear family and a minimum of 28 (46.7 %) patients were living in a joint family means indicating that math patients who participated in this study were living in a nuclear family. As per

hospitalization, wise distribution maximum of 30 (50.0 %) patients were hospitalized a ≥3 times and of minimum 15 (25.0%) patients were hospitalized which indicates that the maximum number of participants were hospitalized at≥3mes.

Table 2. Assessment of participant Socio demographics details

Variable	**Mean**	Standard deviation
Patients Age	40.47	11.86
Relatives age	47.02	16.20
Income	1128.5	8127.2

Table 2 shows that mean the age of the person with a standard deviation ere 40.47±11.86, mean age of relation of a person with schizophrenia patients was 47.02±16.20. The mean family income was 1128.5±8127.

Table 3. Level Psychopathology of Schizophrenia patients

PANNS Domains	**Mean**	**Number of patients (n=60)**	**Percentage**
Positive Scale (P)	≤ 8	40	66.7
	> 8	20	33.3
Negative Scale (N)	≤ 13	41	68.3
	> 13	19	31.7
General Psychopathology (G)	≤ 31	37	61.7
	> 31	23	38.3
Total PANNS	≤ 52	36	60
	> 52	24	40

Table 3 shows the domain-wise psychopathology of schizophrenic patients. The mean of the positive scale is 8. Above table Positive scale (P), 40 (66.7%) patients show of which mean<8, it indicates that 40 patients had no impairment in their positive symptoms. In the above table, the Positive scale (P) was 20 (33a .3%) patients which had a mean>8, which indicates that 20 patients had impairment in their positive symptoms.

The mean of this Negative is 13. In the above Table Negative scale (N), the 41 (6 8. patients of a which mean<13, it indicates that 41 patients had no impairment in their Negative symptoms. In the above table Negative scale (N) 20 (31.7%) patients had meanwhich3, which indicates that 19 patients had impairment in their Negative symptoms.

The mean of the General Psychopathology (G) is 31. In above the table General Psychopathology (G)patients1.7%) of patients which means <31, indicates that 37 patients had no impairment in their General Psychopathology. In Above Table General Psychopathology (G) 23 (3a 8.3%) patients had meanwhich13, which indicates that 23 patients had impairment in their General Psychopathology.

The mean of the Total PANSS the > 52. In the above table Total PANSS, 36 (60%) patients had a mean of <52, which indicates that 36 patients had no impairment in their Total PANSS psychopathology. The in above table total PANSS of 24 (40%) patients had a mean of >5 which indicates that 24 patients had impairment in their Total PANSS psychopathology Overall the above table shows that 36 patients had no impairment in their Total PANSS psychopathology and only 24 patients had impairment in their Total PANSS psychopathology.

Table 4. Medical drug adherence of schizophrenia patients

MARS Group	Frequency	Percentage %
<6 Non-Adherence	26	43.3 %
>6 Adherence	34	56.7%
Total	60	100.0%

Table No. 4 Shows that N=60 samples are distributed in two categories. Those (<6) are non-adherence and (>6) are Adherence. The overall table shows that n=26 comes under the non-adherence category percentage wise it is 43.3% and the majority wise n=34 comes under the Adherence percentage wise it is 43.3%.

Table No. 5 Family Functioning individuals with schizophrenia

Domain	Mean	SD
Problem Solving Ability	13.30	0.46
Communication	19.60	0.92
Role functioning	26.13	2.99
Affective Responsibility	13.60	0.92
Attitude- Involvement	16.20	1.85
Behavioral Control	20.00	0.00
General functioning	25.80	2.77

Table 5 shows the score obtained by the individuals with Schizophrenia on Problem Solving Ability is 13.30±0.46, Communication is 19.60±0.92, Role functioning is 26.13±2.99, Affective Responsibilities is 13.60±0.92, Attitude- Involvement is 13.60±1.85, on Behavioral Control is 20.00±0.00, on General functioning is 25.80±2.77. That it was showing nation takes Schizophrenic individuals to have average Problem-Solving Ability, Role functioning &General functioning. Communication, Affective Responsibility, Attitude- Involvement, and Behavioral Control were normal.

Table No. 6 Relationship between drug adherence, psychopathology & family functional

Domains	MARS		1	2	3	4	5	6	7
PANSS P Score	.993**		.993**	-.952	-.087**	-.087**	.954**	.993**	.993**
PANSS N Score	.934**		.934**	-.886**	-.084	-.084**	.897**	.934**	.934**
PANSS G Score	.966**		.966**	-.919**	-.085**	-.085	.928**	.966**	.966**
Total PANSS	.982**		.982**	-.937**	-.087**	-.087**	.943	.982**	.982**
MARS Score	1		1.000**	-.967**	-.085**	-.085**	.962**	1.000	1.000

**p = <0.01

Table 6, shows a correlation between the correlation between Medication adherence and psychopathology. There is a most significant negative correlation between Medication adherence and positive symptoms of Schizophrenia (.993 p 0.01), which indicates that if medication adherence is good then positive symptoms of Schizophrenia will get decrease. There is a significant negative correlation between Medication adherence and negative symptoms of Schizophrenia (.934 p 0.01), which indicates that if medication adherence is good then negative symptoms of Schizophrenia will get decrease.

There is a most significant negative correlation between Medication adherence and general psychopathology of Schizophrenia (.990 p 0.01), which indicates that if medication adherence is good then general psychopathology of Schizophrenia will get decrease. There is the most significant negative co-relation between Medication adherence and total PANSS psychopathology of Schizophrenia (.982 p 0.01), which indicates that if medication adherence is good then total PANSS psychopathology of Schizophrenia will get decrease.

There is the most significant positive co-relation between Medication adherence and the Family functioning scale. In this, there are most significant positive co-relation between Medication adherence and problem-solving ability (1.000 p 0.01), which indicates that if medication adherence is good then the problem-solving ability will get increase. There is a most significant positive correlation between Medication adherence and Communication (1.000 p 0.01), which indicates that if medication adherence is good then communication will get improved. There is a most significant positive correlation between Medication adherence and role functioning (-.085 p 0.01), which indicates that if medication adherence is good then role functioning will get improved. There is s most significant positive correlation between Medication adherence and affective responsibility (-.085 p 0.01), which indicates that if medication adherence is good then role functioning will get improved. There is a most significant negative co-relation between Medication adherence and attitude involvement (-.962 p 0.01), which indicates that if medication adherence is good then attitude involvement will get decreased. Thea re is a significant positive co-relation between Medication adherence and behavioral control (1 p 0.01), which indicates that if medication adherence is good then behavioral control will get improved. Ta here is a significant positive co-relation between Medication adherence and general functioning (1 p 0.01), which indicates that if medication adherence is good then general functioning will get improved.

There is a most significant negative correlation between positive symptoms of Schizophrenia and problem-solving ability (.993 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then the problem-solving ability will get decrease sed. There is a most significant negative correlation between positive symptoms of Schizophrenia and communication (-0.952 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then communication will get decreased. There is a most significant negative correlation between positive symptoms of Schizophrenia and role functioning (-.087 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then role functioning will get da decrease. There is a most significant negative correlation between positive symptoms of Schizophrenia and affective responsibility (-.087 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then affective responsibility will get decrease. There is a most significant positive correlation between positive symptoms of Schizophrenia and attitude involvement (.954 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then attitude involvement will get increase. There is a most significant negative correlation between positive symptoms of Schizophrenia and behavioral control (.993 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then behavioral control will get decrease. There is a most significant negative co-relation between positive symptoms of Schizophrenia and general functioning (.993 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then general functioning will get decrease.

PANSS Negative **S**ymptoms Correlation with Family Functioning. There's a most significant negative correlation between negative symptoms of Schizophrenia and

problem-solving ability (.934 p 0.01) which indicates that if negative symptoms of Schizophrenia increase then the problem-solving ability will get decreased. There is the most significant negative correlation between negative symptoms of Schizophrenia and communication (-.886 p 0.01) which indicates that if negative symptoms of Schizophrenia increase then communication will get decrease. There is a most significant negative correlation between negative symptoms of Schizophrenia and role functioning (-.084 p 0.01) which indicates that if negative symptoms of Schizophrenia increase then role functioning will get decrease. There is a most significant negative correlation between negative symptoms of Schizophrenia and affective responsibility (-.084 p 0.01) which indicates that if negative symptoms of Schizophrenia increase then affective responsibility will get decrease. There is a most significant positive correlation between negative symptoms of Schizophrenia and attitude involvement (.897 p 0.01) which indicates that if negative symptoms of Schizophrenia increase then attitude involvement will get increase. There is a most significant negative correlation between negative symptoms of Schizophrenia and behavioral control (.934 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then behavioral control will get decrease. Thea re is the most significant negative correlation between negative symptoms of Schizophrenia and general functioning (.934 p 0.01) which indicates that if positive symptoms of Schizophrenia increase then general functioning will get decrease.

Correlation between PANSS General Psychopathology and Family Functioning: There theis most significant negative correlation between the general psychopathology of Schizophrenia and problem-solving ability (.966 p 0.01) which indicates that the general psychopathology of Schizophrenia increases then the problem-solving ability will get decreased. There is a most significant negative co-relation between general psychopathology of Schizophrenia and communication (-.919 p 0.01) which indicates that if general psychopathology of Schizophrenia increases then communication will get decrease. There is a most significant negative co-relation between general psychopathology of Schizophrenia and role functioning (-.085 p 0.01) which indicates that if general psychopathology of Schizophrenia increases then role functioning will get decrease. There is a most significant negative co-relation between general psychopathology of Schizophrenia and affective responsibility (-.085 p 0.01) which indicates that if general psychopathology of Schizophrenia increases then affective responsibility will get decrease. There is a most significant positive correlation between general psychopathology of Schizophrenia and attitude involvement (.928 p 0.01) which indicates that if general psychopathology of Schizophrenia increases then attitude involvement will get increase. There is a most significant negative co-relation between general psychopathology of Schizophrenia and behavioral control (.966 p 0.01) which indicates that if general psychopathology of Schizophrenia increases then behavioral control will get decrease. There is a most significant negative co-relation between general psychopathology of Schizophrenia and general functioning (.966 p 0.01) which indicates that if general psychopathology of Schizophrenia increases then general functioning will get decrease.

There's a most significant negative correlation between the PANSS Total Score of Schizophrenia and problem-solving ability (.982 p 0.01) which indicates that if the PANSS Total Score of Schizophrenia increases then the problem-solving ability will get decreased. There is a most significant negative correlation between the PANSS Total Score of Schizophrenia and communication (-.937 p 0.01) which indicates that if the PANSS Total Score of Schizophrenia increases then communication will get decrease. There is a most significant negative correlation between the PANSS Total Score of

Schizophrenia and role functioning (-.087 p 0.01) which indicates that if the PANSS Total Score of Schizophrenia increases then role functioning will get decrease. There is the most significant negative co-relation between general psychopathology of Schizophrenia and affective responsibility (-.087 p 0.01) which indicates that if the PANSS Total Score of Schizophrenia increases then affective responsibility will get decrease. There's moa st significant positive correlation between PANSS Total Score of Schizophrenia and attitude involvement (.943 p 0.01) which indicates that if PANSS Total Score of Schizophrenia increases then attitude involvement will get increase. There is a most significant negative correlation between the PANSS Total Score of Schizophrenia and behavioral control (.982 p 0.01) which indicates that if the PANSS Total Score of Schizophrenia increases then behavioral control will get decrease. Thea re is the most significant negative correlation between the PANSS Total Score of Schizophrenia and general functioning (.982 p 0.01) which indicates that if the PANSS Total Score of Schizophrenia increases then general functioning will get decrease.

DISCUSSION

The present study was designed to assess the impact of Medication Adherence on individuals with schizophrenia and their Family. This is a descriptive type of study. A total of 60 individuals with schizophrenia get selected by the purposive sampling method. The age group was 18-45 years. The present study shows that if medication adherence is good the psychopathology of schizophrenic patients gets decreases. The present study also shows that if medication adherence is good the family functioning is also good. Similar findings reported Barkhof et. al., 2013, Byerly at. al., (2007) and Lacro et. al., (2002)

CONCLUSION

The present study shows that if medication adherence is good then the family functioning of the family will be good. If the medication adherence is good, then most of the patients had no impairment in their positive symptoms. The present study also highlights the need and scope for psychiatric social workers to work in the field of psycho-social rehabilitation of psychiatric patients.

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