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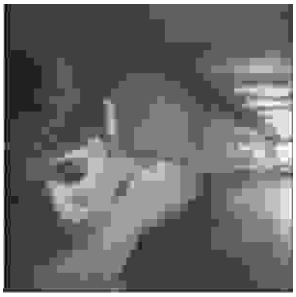
SCHIZOPHRENIA AND DRUG NON-COMPLIANCE



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ABSTRACT ... wajidpsy@hotmail.com **Objectives:** To determine the different levels of drug non-compliance in patients with schizophrenia and to find out its relationship to relapses of the disorder and admission to the hospital. **Design:** A randomized, retrospective, case- controlled study. **Place and Duration of Study:** Conducted at Government Mental Hospital Peshawar, from April 2001 to December 2002. **Patients and Method:** 50-Cases were randomly (each fifth patient) selected from all the admissions with the DSM-IV diagnosis of Schizophrenia, 50- matched controls were randomly (each fifth patient) selected from the outdoor patients. Both sexes were included. The basic sociodemographic characteristics and the clinical profile of all the patients were collected. The level of drug non-compliance with previous history of admissions to hospital and total number of relapses. SPSS version 10 was used for statistical analysis. The applied method for group comparison was the Chi-square test. **Results:** The mean age of study group was 33.54 ± 8.15 years as compare to 32.56 ± 9.02 years of control group, most participants were men, and a predominant proportion of participants were married. Majority of the patients were from the lower socio-economic class. Scores on the drug non- compliance were statistically significant with a p value of (0.027). The difference between the two groups, regarding the previous number of relapses was statistically significant with a p value (0.002). The number of previous admission was also statistically significant and the p value was (0.017). 74.1% of the patients with poor drug compliance relapsed, while 71% of patients with poor compliance needed admission. **Conclusion:** An important measure of out come is compliance with treatment. A substantial proportion of patients with schizophrenia continues to relapse and are readmitted to the hospital as a result of non-compliance to treatment.

Key words: Schizophrenia, Relapses, Readmissions, Drug non-compliance.

INTRODUCTION

There is overwhelming evidence that patients with schizophrenia stop taking medication, miss clinical appointments, fail to report essential information to their psychiatrists, and otherwise choose, not to participate in recommended treatments[1]. Potential contributing factors

for treatment non-compliance can be broadly conceptualized under the health belief model, which assumes adherence behavior is dynamic and influenced by a patient beliefs about the need for treatment, the potential risks and benefits of the treatment, barriers to treatment and social support for adhering to treatment[2]. Frequent causes of poor compliance are lack of insight[3]. Breakdown of therapeutic alliance, discrimination associated with illness, cultural beliefs, failure to understand the need to take daily medication even when in stable phase, cognitive impairment[4] and experience of unpleasant medication side effects, such as akathesia[5].

Patients who do experience side effects may decide that the side effects outweigh the benefits of the medication[1]. Even with good insight into their illness patients may not perceive it as potentially or actually helpful[1]. Finally people important to the patient, including family and friends may discourage the patient from taking or participate in other aspects of treatment.

Moreover, anti-psychotic drugs are associated with a variety of adverse effects that can produce subjective discomfort, untoward behavioral effects, like akinesia, akathesia and abnormal involuntary movements for example tardive dyskinesia and tardive dystonia,[6] and contribute to high rates of non-compliance in taking medication[7].

In DSM-IV, (APA)[8] non-compliance with treatment is included as one of the conditions that make up the diagnostic category of "additional disorders that may be a focus of clinical attention". This category can be used when the clinical attention is noncompliance with an important aspect of the treatment for a mental or a general medical condition.

Compliance is defined as the "extent to which a person's behavior coincides with medication or health advice[9]. There is no generally accepted definition of drug non-compliance in schizophrenia. Ideally non-compliance should be defined in a manner that is empirically informed and clinically meaningful. Zygmunt, olfson et al[10] suggested non-compliance with oral anti psychotic as complete cessation of medication for at least a week. Non compliance is the degree to which a patient does not carry out the clinical recommendation of a treating physician, it is the failure of the patient to follow the prescribed regimen[11]. A majority (91%) of the patients with schizophrenia, who stop taking medication for more than a week, will continue not to take medication until they relapse. Compliance is important because it is directly related to the prognosis of the ilolness[12]. The consequences of non-compliance have been studied extensively and are significant especially, lack of disease control, more relapses and hospital admissions or readmissions[13]. Keeping in view all the above facts, the present study was conducted to see the level of drug non-compliance in patients with schizophrenia between two groups and the rates of admission and subsequent relapses and to find out if there is any association between the degree of drug non-compliance and the need for admission and frequent number of relapses.

PATIENTS AND METHODS

A retrospective, case- controlled randomized, study conducted at Government Mental Hospital Peshawar, from April 2001 to December 2002.

Fifty -Cases were randomly selected (every fifth patient) from all the admissions with the DSM-IV[8] diagnosis of Schizophrenia, over the study period. All these patients were admitted, investigated, managed and discharged according to the routine protocol of the hospital. Patients between the age of 20years and 60 years were included. 50-patients (matched controls) were randomly selected (every fifth patient) from the outdoor patients with the DSM-IV diagnosis of Schizophrenia. Both sexes were included. Informed consent[14] was taken for inclusion in the study. A comprehensive proforma was designed to record the basic sociodemographic characteristics[15] and the clinical profile[16] of all the patients were collected. The level of drug - compliance with previous history of hospitalization and total number of relapses.

PANSS scale[17] was applied to determine the predominant positive and negative symptoms of schizophrenia.

Statistical analysis was made with the statistical package for windows (version –10). The applied method for group comparison was Chi-square test, if not indicated otherwise.

RESULTS

The socio-demographic characteristics of study sample and controls are summarized in Table-I.

Table-I. Socio-demographic characteristics of study sample and controls.

Variable	sample (100%*) n = 50	Control (100%*) n = 50
Age (Mean)	33.54±8.15**	32.56±9.02
Sex		
Males	43 (86%)	43 (86%)
Females	7 (14%)	7 (14%)
Marital Status		
Single	18 (36%)	17 (34%)
Married	30 (60%)	29 (58%)
Widowed	02 (04%)	03 (06%)
Separated	00 (00%)	1 (02%)
Education		
Uneducated	22 (44%)	23 (46%)
Primary	11 (22%)	09 (18%)
Middle	09 (18%)	07 (14%)
Secondary	05 (10%)	06 (12%)
Intermediate	02 (04%)	05 (10%)
Graduation	01 (02%)	00 (00%)
Employment		
Government employed	04 (08%)	05 (10%)
Self employed	23 (46%)	21 (42%)
Un-employed	13 (26%)	12 (24%)
Student	04 (08%)	05 (10%)
House wife	06 (12%)	07 (14%)
Socio-economical Status		
Upper	01 (02%)	00 (00%)
Middle	10 (20%)	09 (18%)
Lower	39 (78%)	41 (82%)
Area of Living		
Urban	26 (52%)	20 (40%)
Rural	24 (48%)	30 (60%)

* (*Percent) &* ** Mean *(in years)* ± *Standard deviation.*

The mean age of study group was 33.54 ± 8.15 years as compare to 32.56 ± 9.02 years of control group, most participants were men, a predominant proportion of participants were married. Majority of the patients were from the lower socio-economic class[14]. There were no significant differences in the socio-demographic characteristics between the two groups except that the control group was mostly from the rural locality.

Table-II. shows the clinical profile of all the patients. The clinical profile indicated that the illness onset was typically in the late *20's*, with first contact for treatment after, three and a half years. There ere no major differences between the two groups regarding past history of illness, family history, drug addiction and treatment received.

Table-II. Clinical profile of the study group and controls.

Variable	Sample (100%*) n = 50	Control (100%*) n = 50
Onset of Illness		
Acute	21 (42%)	23 (46%)
Insidious	29 (58%)	27 (54%)
Age at onset (Years)*	27.3±7.01*	26.3±5.90*
Duration of illness (Years)*	4.88±1.22*	4.56±1.36*
First contact for treatment (Years)*	3.46±0.71*	3.30±0.89*
Past History of Psychiatric Illness		
Present	29 (58%)	27 (54%)
Absent	21 (42%)	23 (46%)
Family History of Psychiatric Illness		
Present	25 (50%)	23 (46%)
Absent	25 (50%)	27 (54%)
Drug Addiction		
Present	22 (44%)	20 (40%)
Absent	28 (56%)	30 (60%)
Treatment Status		
Received treatment	12 (24%)	13 (26%)
Partially treated	17 (34%)	14 (28%)
Un-treated	21 (42%)	23 (46%)
** Mean (in years) ± Standard deviation*		

The different levels of drug compliance, the number of previous relapses and the number of previous admissions are statistically analyzed in Table-III.

Table-III. Drug non-compliance, Number of relapses and admissions.				
Variable	**Mean±SD***	**DF****	**X_2**	**P Value**
Drug non-compliance	2.70±1.06	03	9.208	0.027
Number of relapses	2.92±1.01	03	14.48	0.002
Number of admissions	2.85±1.09	03	10.160	0.017
SD* *is standard deviation* & DF** *is degree of freedom.*				

As shown in Table-III, scores on the drug non-compliance were statistically significant with a *p value of (0.027).* The difference between the two groups, regarding the previous number of relapses was also statistically significant with a *p value (0.002).* The number of previous admission between the study group and the control was also statistically significant and the *p value* was (*0.017)*.

Table-IV. Cross Tabulation of Drug non-Compliance with Number of Admissions and Number of Relapses.				
Variable	**% Age of Patients**	**DF***	**X_2**	**P VAlue**
Drug Non-compliance & number of relapses	74.1%	09	19.342	0.002
Drug Non-compliance & number of admissions	71%	09	31.90	0.006
DF* *is the degree of freedom.*				

To find out any statistically important association between the levels of drug Non-compliance and the number of previous relapses and admissions the cross tabulation was designed to either accept or reject the null hypothesis.

As shown in Table-IV, regarding the level of compliance and number of relapses, there was statistical significance with a *p value of (0.002)* and *74.1%* of the patients with poor drug compliance relapsed.

There is inverse relationship between the level of drug non-compliance and number of admissions, as the degree of drug compliance decreases there is an increase in the need for admissions. *71%* of patients with poor compliance needed admission during the past month, with a statistically significant *p value of (0.006).* All these results are further discussed.

DISCUSSION

In the epidemiological study of schizophrenia by Hafner and Heiden, it was found that the mean age of onset of schizophrenia or fist admission is about 25 years and 35 years for men and women respectively[18]. Despite the differences in age of onset, almost all the other actual variables do not differ between the sexes,[19] while the lifetime risk for schizophrenia is the same for men and women. The mean age of the study group and control was *33.54 ± 8.15* years as compare to *32.56 ± 9.02* years respectively. With the majority of our patients were men.

In the earlier studies by Lewine et al[20] and Hambrecht et al[21] there was higher lifetime incidence rates for men, in part because of the samples were recruited from the public mental hospitals with higher proportion of male patients. Likewise most of our subjects were men, partly because in our society, women are less likely to seek help from a mental hospital and refuse to be admitted to

female indoor custodial wards in a public mental hospital[22].

Several studies[15 &23] have shown that schizophrenia is more prevalent in the lower socio-economic class. Likewise, most of our patients were from the lower socio-economic class the admission rates are generally higher in urban than in rural areas and much higher from the central areas of the large cities than from the surrounding suburbs [24]. The clinical profile indicated that the onset of illness was typically in the late *20's.* While the first contact for treatment and ensuing psychiatric care was delayed for more than 3 years, after the onset of illness. Drug addiction i.e. cannabis use, was also equally prevalent in both these groups. According to Zammit etal[25] the relation between cannabis and psychosis is complex, firstly it can be co-incidental. Secondly pre-morbid personality traits may predispose the individual both to develop schizophrenia and cannabis addiction. Thirdly, cannabis may have been secondary to the presence of schizophrenia, as a form of self-medication for the symptom, despite the failure to identify the disorder itself.

In the present study we were interested to know, the different levels of medication compliance and its effect on subsequent clinical relapses and need for admission to indoor facility. There were statistically significant differences in the level of drug non-compliance between the groups with a *p value of (0.027).* The study group had predominantly more relapses and previous history of hospitalization[26]. As compared to the control group the study group had an increase number of more frequent clinical relapses, with the p *value* of *(0.002)* with a high statistical significance. The number of previous admission showed statistically significant difference and the p *value* was (*0.017)*.

As we postulated, we found significant association between the level of drug non-compliance and number of admissions, with more frequent relapses, as the degree of drug compliance falls there is an increase in the need for admissions with more relapsing disorder. *74.1%* of the patients with poor drug compliance relapsed. It was statistically significant with a *p value of (0.002).* While, *71%* of patients with poor compliance needed admission during the past month, with a statistically significant *p value of (0.006).*

Up to one half of all stabilized patients may be relapsing and readmitted to the hospital within one year after discharge. Sheitman et al[27] reported that the more relapses and periods off medication, the poorer the prognosis and long term out come of schizophrenic patients. Weiden and Olfson (1995)[28] estimated that the total annual cost of short-term hospital admission for relapsing schizophrenia is almost $ 2.3 billions. Non-compliance with medication is one of the most important factors leading to relapse in schizophrenic patients. One of the more disturbing consequences of medication non-compliance is an increased potential for assault and dangerous behaviors, especially during periods of psychosis[10].

Therefore determining the appropriate length of anti-psychotic treatment, proper discharge and follow up plan and choosing a convenient and safe anti-psychotic drug, may contribute to a lower risk of relapses and readmissions. Chakos et al (2001)[29] demonstrated a supporting evidence that the second generation anti-psychotic drugs may have a more tolerable side effects profile leading to better patient compliance and reducing relapses and readmissions.

CONCLUSIONS

An important measure of out come is compliance with treatment. A substantial proportion of patients with schizophrenia continues to relapse and are readmitted to the hospital frequently, as a result of non-compliance to treatment.

Establishing a therapeutic alliance is a crucial element of treatment adherence. This gives patients an opportunity to discuss and learn about their illness in a safe, non-judgmental environment. A trusting relationship with a therapist will encourage patients to take their medications, will come for appointments and freely report symptom or side effects. The end result will be a better course of treatment, fewer relapses and an improved quality of life for the patients and their families.

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