

Poor Medication Compliance in Schizophrenia from an Illness and Treatment Perspective

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Abstract

Patient's compliance is an important factor that plays vital role in successful maintenance of treatment and the prevention of relapse. Poor treatment compliance is a serious condition that prevents a person to function normally in daily life and is a major cause of psychiatric morbidity and mortality. The objective of study was to identify patients with poor treatment compliance and associated factors in schizophrenia from an illness and treatment perspective. This study identified factors associated with poor treatment compliance among 100 patients with schizophrenia attending outpatient department at National Medical College, Department of Psychiatry. The study was a descriptive cross section study and purposive sampling, a type of non-random sampling technique was utilized for study and informed consent was taken prior to study. Out of 100 respondents, majority were male (61%) and females (39%) in the ratio of 1.56:1. Approximately one third (32%) of them were illiterate, more than half (59%) had income less than 5000. More than half (57%) of respondents and family members had lack of knowledge and awareness of illness. Majority (62%) had been treated prior with other than doctor especially with faith healer. 73% of them had longer duration of illness of 3 years or more. Poor compliance among patients were found due to numerous direct or indirect reasons, important being patient and illness related factors like suspiciousness (2%), hallucination (2%), poor insight (2%), un-affordability (68%), non-availability of treatment (8%), unwanted side effects (92%), co-morbid illness (14%), substance use(19%). Similarly doctors related factors contribute to poor compliance were less awareness given, < 10 minutes given in appointment (87%), unfriendly attitude (7%), lacking accessibility (11%), and prescription of more or equal to 4 tablets (35%). The study explored factors that directly or indirectly contribute to poor medication compliance which was multi-factorial. No isolated single or definite factor was responsible for the illness. Detection and prevention of certain condition at proper time could prevent individual vulnerable to non-compliance. Moreover, exploration of contributing factors also helps in early detection of poor compliance and treatment of illness.

Keywords: Compliance; Non-adherence; Non-compliance; Poor compliance; Schizophrenia

Introduction

Schizophrenia is a severe psychiatric chronic and disabling illness [1] that has around 1% lifetime risk and affects young age group [2]. Half of those individuals, their illness will be lifelong, probably requiring long-term medication [3]. It has a life time prevalence of 4.0/1000 individuals worldwide [4]. It has serious physical, social and economic consequences [5], which is often accompanied by relapse even while on treatment [2].

Non-compliance or non-adherence to treatment is the degree to which a patient does not follow the treatment advised by the treating doctor [5]. In other words, it is the failure of the patient to follow the prescribed treatment regimen [6]. Non-compliance is a significant problem in all age groups that applies to all chronic disease states and settings; and tends to worsen the longer a patient continues to take medication [7]. Non-compliance is considered to be the major challenge in the treatment of chronic illnesses including Schizophrenia globally due to long duration and treatment and numerous other related factors. 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 [6]. Zygmunt, *et al.* [8] suggested non-compliance with oral anti-psychotic as complete cessation of medication for at least a week.

There is overwhelming evidence that patients with schizophrenia stop medication prematurely, miss doctor appointments, fail to report important information during visit, and avoid or neglect treatments recommendation [9]. Potential contributing factors for treatment non-compliance can be broadly conceptualized under the health belief model, which pointed out that adherence behavior is dynamic and influenced by different factors including beliefs about the need for treatment, and its potential risks and benefits factors [10]. Moreover, it also emphasized on barriers to treatment and social support for adhering to treatment. About half of the patients with schizophrenia are non-compliance to treatment [10]. Fleischhacker, *et al.* [11] pointed out the treatment compliance in schizophrenia, including such patient-related factors as psychopathology and co-morbidity; financial factors, supervision of treatment, and location of treatment services; physician-related factors, such as therapeutic alliance and provision of information; and treatment-related factors, such as side effects, dosing and administration, and poly-pharmacy. They concluded that the issue of treatment adherence in schizophrenia is extremely complex and multifaceted, and is likely characterized by multifarious relationships between beneficial medication effects, medication side effects, the meaning of medication effects and side effects to the patient, and adherence to prescribed treatment. Financial constraints, lack of insurance, early stage of treatment, doubt about the treatment's efficacy, cognitive deficits, and poor physician-patient relationships are also likely predictors of noncompliance among psychiatric patients [12]. Frequent causes of poor compliance are lack of insight, discrimination associated with illness, cultural beliefs, failure to understand the need to take daily medication even when in stable phase, cognitive impairment and experience of unpleasant medication side effects [10]. Reasons for non-compliance in Schizophrenia are multiple and multi factorial in origin; and we are performing this study to identify the related factors for poor compliance from illness and treatment perspective.

Materials and Methods

This descriptive cross-sectional study was conducted in the Department of Psychiatry, National Medical College and Teaching Hospital after getting approval from Institutional Review Committee (IRC). The study consisted of 100 patients with Schizophrenia evaluated independently and consecutively at out-patient department. Purposive sampling, a type of non-random sampling technique was utilized for study. Inclusion criteria were defined as a diagnosis of Schizophrenia according to ICD-10 criteria [13], age of 18 years and older, discontinuation of medication seven or more days, treatment drop out, and error dosage. Following the detailed description of the study to all family members and subjects, written informed consent was obtained for each subject. They were explained that questions would be asked regarding demographic profiles, drug compliance and factors influencing it. There were total 31 questions in the study. Total 8 questions were related to socio-demographic profile, another 8 questions were illness related, 6 questions were treatment related, and 9 questions were patient and doctor related. Some questions in the study were knowledge of illness, duration of illness, whether treatable condition or not, ever stopped medication due to suspiciousness, hallucination, or poor insight, prior treatment, affordability of treatment, availability of treatment, unwanted side effects of drug, total numbers of tablet prescribed, co-morbid illness, accessibility of doctor, awareness given by doctor, time given by doctor during consultation, and attitude of treating doctor. Questionnaire was given to patient who had insight (awareness and understanding of being ill) and who were able to perform. Those patients who had lack of insight or unable to complete questionnaire, it was given to their informant. Data were entered manually into statistical package for social science (SPSS-20) and then it was analyzed by using descriptive statistics in term of frequency and percentage. Interpretation of the study was done on the basis of analyzed data using tables.

Results

The response rate of study sample was 100%. The total 100 patients were evaluated for poor treatment compliance of which majority (61%) were male and 39% were female in the ratio 1.56:1. The mean age of respondent was 33.2±12.8. Table 1 explored the socio-demographic profile of respondents in which majority of them were in age group 18-25 years, married, educated and under poverty level. Approximately half of them did not have knowledge of illness, one third had long duration of illness (> 5 years) and one fourth believed it as untreatable illness (Table 2). Approximately more than one third left medication thinking being all right and other small percentage left due to hallucination, poor insight and cognitive impairment as shown in Table 2.

Variables	n (%)
Age	
18 - 25 yrs	43 (43%)
26 - 35 yrs	32 (32%)
36 - 45yrs	16 (16%)
> 45yrs	9 (9%)
Gender	
Male	61 (61%)
Female	39 (39%)
Religion	
Hindu	54 (54%)
Muslim	42 (42%)
Buddhist	2 (2%)
Christian	2 (2%)
Occupational Status	
Agriculture	20 (20%)
Business/Services	21 (21%)
Daily wages	17 (17%)
Student	18 (18%)
Homemaker	4 (24%)
Educational Status	
Illiterate	32 (32%)
Literate	68 (68%)
Type of family	
Nuclear	28 (28%)
Joint	52 (52%)
Extended	20 (20%)
Family income	
Below NRs 2500	26 (26%)
NRs. 2500-5000	33 (33%)
More than 5000	41 (41%)
Marital Status	
Married	78 (78%)
Unmarried	15 (15%)
Widowed	1 (1%)
Divorced	6 (6%)

Table 1: Socio Demographic Profile (n=100).

Variables	n (%)
Knowledge of Schizophrenia	
Yes	57
No	43
On Yes response, type of illness (n = 57)	
Physical illness	04 (7%)
Mental illness	44 (77%)
Psychological illness	05 (9%)
Others	04 (7%)
Treatable illness	
Yes	78 (78%)
No	22 (22%)
Duration of illness	
< 6 months	3 (3%)
6 - 12 months	8 (8%)
1 - 3year	16 (16%)
3 - 5 yrs	42 (42%)
> 5yrs	31 (31%)
Stopped medication due to suspiciousness	
Yes	2 (2%)
No	98 (98%)
Left medication thinking being all right	
Yes	38 (38%)
No	62 (62%)
Stopped medication due to hallucination	
Yes	1 (1%)
No	99 (99%)
Stopped medication due to poor insight	
Yes	4 (4%)
No	96 (96%)
Left medication due to cognitive impairment	
Yes	2 (2%)
No	98 (98%)

Table 2: Illness Related Factors (n = 100).

Majority (62%) have treated prior with other than doctor of which almost half of them treated with Dhama-Jhankri as shown in Table 3. Majority of them (68%) could not afford the cost of medicines even though almost half of them have easily availability of treatment. Slightly more than half of them (52%) had easy availability of treatment. Regarding prescription of doctors 41% were taking 3 tablets and 35% were taking more or equal to 4 tablets a day. Majority (92%) experienced side effect among them approximately half of them had sedation, difficulty thinking, and dizziness. Most importantly, none of them received psychological treatment from Psychologist.

Variables	n (%)
Treatment done prior other than doctor	
Yes	62 (62%)
No	38 (38%)
On Yes Response (n = 62)	
Dhami-Jhankri	31 (50%)
Vaidhya	3 (5%)
Maulana	22 (35%)
Others	6 (10%)
Cost affordability of medicine	
Affordable	32 (32%)
Non-affordable.	68 (68%)
Availability of treatment	
Easily available	52 (52%)
Available with difficulty	40 (40%)
Not available.	8 (8%)
No. of tablets prescribed	
1 tablet	2 (2%)
2 tablets	22 (22%)
3 tablets	41 (41%)
≥4 tablets	35 (35%)
Unwanted side effect of drugs	
Yes	92 (92%)
No	8 (8%)
On Yes response (n = 92)	
Extra-pyramidal symptoms (EPS)	20 (22%)
Sedation/cognition	47 (47%)
Endocrine	12 (13%)
Metabolic	9 (10%)
Gastrointestinal (GI)	5 (5%)
Others	3 (3%)
Ever received psychological treatment	
Yes	0 (0%)
No	100 (100%)

Table 3: Treatment related factors (n=100).

Considering patient related factors (Table 4), 4% have positive family history of mental illness, and majority (77%) respondents have embarrassment by “mentally ill” and avoided going to see doctor. Regarding co-morbid illness other than substance use, 14% of the respondents gave positive reply. Among them majority of them (65%) have other physical illness such as low back pain, migraine, arthritis, gastritis. Similarly, one of them has diabetes and two each of them have hypertension and other psychiatric illness (personality disorder and OCD). Regarding substance use, almost one fifth of respondents (19%) have habit of substance use. Regarding non-compliance associated with doctor related factors in which almost 1/9th have not easy accessibility (Table 5). On the other hand, 12% of respondent did not received awareness at all and some of them found doctor’s attitude unfriendly (07%) and hostile (02%).

Variables	n (%)
Family history of Mental illness	
Yes	4 (4%)
No	96 (96%)
Ever embarrassed by “mentally ill” and avoid going to see doctor	
Yes	23 (23%)
No	77 (77%)
Co-morbid illness other than substance use	
Yes	86 (86%)
No	14 (14%)
On Yes response (n= 14)	
Diabetes	2 (14%)
Hypertension	9 (65%)
Other Physical illness	2 (14%)
Other psychiatric illness	
Co-morbid Substance use	
Yes	81 (81%)
No	19 (19%)
On Yes response (n=19)	
Tobacco/Nicotine	3 (16%)
Alcohol	1 (5%)
Cannabis	0 (0%)
Opioid	4 (21%)
Others	

Table 4: Patient Related Factors (n = 100).

Variables	n (%)
Accessibility of doctor	
Easily accessible	48 (48%)
Accessible with difficulty	41 (41%)
Not accessible	11 (11%)
Awareness given by doctor	
Full awareness	36 (36%)
Partial awareness	52 (52%)
No awareness at all	12 (12%)
Doctor’s attitude	
Friendly	91 (91%)
Unfriendly/Rejecting	7 (7%)
Hostile	2 (2%)
Time given to patient	
< 2 minutes	3 (3%)
2 - 5 minutes	24 (24%)
5 - 10 minutes	60 (60%)
> 10 minutes	13 (13%)
Level of satisfaction with the competence of doctor	
Fully satisfied	63 (63%)
Partially satisfied	28 (28%)
Not satisfied at all	9 (9%)

Table 5: Doctor Related Factors (n = 100).

Discussion

Approximately half of the patients with schizophrenia are non-compliance to treatment and the factors associated it are multiple [6]. The non-compliance issue is complex and not only a single cause found to be responsible for it. Demographic findings of the study show that majority 22(44%) respondent were age group of 18 to 26 years and of them majorities were males (68%). The finding is similar to some studies where it was found that younger patient especially male have shown more non-compliance than older one [11,14,15]. Various past researches revealed the association of education level and non-compliance [11,16,17]. Low education is the risk factor for poor treatment compliance and non-compliance was found more among illiterate patients [15,17]. Our study has also shown similar result where approximately one third of them were illiterate and one fifth were literate but they were only able to read and write. Regarding family structure, majority of respondents are living in joint and extended family. This is our normal cultural norms [18]. Living together is a protective factor for treatment compliance and living alone is a further risk factor [19,20]. In contrast living together may be a risk factor if the involved interpersonal relationships are perceived as distressing or if expressed emotion is present [11]. Approximately, more than half (59%) of respondents were under poverty level. Some studies found that financial difficulties and poverty are the important risk factor for non-compliance [11,19,20]. No association was found regarding marital status and non-compliance [21], however poor compliance was seen among divorced population with schizophrenia [22]. Years of separation with spouse is proportionately increased the risk of non-compliance [23]. In our study 6% of respondent having divorced support the former studies.

Knowledge and awareness of illness is vital for better compliance [24]. Approximately half of respondents did not have knowledge of illness and those who had, around one fourth of them denied schizophrenia as mental illness. Similarly, 22% of respondent said it as untreatable illness. In our context majority of people are unaware of mental illness that may complicate the treatment process. The fact of taking medication may become a distressing element especially to them who are unaware of their illness and treatment process that ultimately result in poor compliance [16]. The relation of duration of illness with non-compliance is mixed. Some studies suggest that non-compliance rate increased with increased in duration of illness [19,25], while other studies claimed that there is no relation between compliance and duration of illness [26]. However, increased duration of illness along with other factors increased the risk of poor compliance [27].

Even though we did not assess the psychotic symptoms in our study, Velligan., *et al.* [15] explained that persistent psychotic symptoms may promote the non-compliance. Approximately 4% of respondents left medication due to poor insight and around one third of them left medication thinking that they were all right. Most studies that are based on subjective methods, clinical impression and expert consensus indicate that impaired insight is a risk factor for poor compliance [15,28]. These findings support our study. Other numerous studies pointed out insight as a complex and multidimensional phenomenon and showed an strong association with attitude towards medication [29,30].

Prior to coming to hospital, majorities (62%) of them seek treatment especially from faith healers especially Dhami-Jhakri (50%) and Maulana (35%) which may be due to socio-cultural belief, lack of awareness about disease and lack of knowledge. Shyangwa., *et al.* [31] in their study in eastern part of Nepal revealed the fact that majority of Nepalese people still believe mental health including schizophrenia is caused by bad fortune. Some believed that it is the result of sins committed in past life and is caused by ghost, evil spirit, witchcraft and black magic [18]. Affordability and availability of treatment denote the compliance of medication [11]. Approximately one third of our respondent left medication due to cost factor where as half of respondent have either difficulties or non-availability of treatment. Study found that difficulties accessing health services are a risk factor for no-compliance [19]. Similarly, financial problem is also consider a risk factor for poor compliance shown in past studies [11,15]. Complexity of treatment regimens adversely affects the outcome of compliance [32]. More than one third of our respondents had prescribed more than 4 tablets a day and 41% were taking 3 tablets a day. Patient prescribed one pill per day showed 81% adherence rate which was decreased to 39% to those who were prescribed 4 pills a day [11,33,34]. Moreover, medication required 4 or more doses per day have been shown to create an unnatural division of the day for most of the pa-

tients and increased the possibility of non-compliance [34]. Majority (92%) of respondent of our study experienced side effects of medication. Although studies suggest that patient taking first generation antipsychotics experienced more side effects especially extra-pyramidal one [6,10], we did not consider the type of drugs and route of administration in the study since respondents were taking both first and second generation antipsychotics and some were taking long acting depot injection as well. Side effects associated with drug produce subjective discomfort and abnormal behavior and abnormal involuntary movements which further contribute to non-compliance [35]. Not only first generation (atypical) antipsychotics but also second generation (typical) antipsychotics have different side effects and especially metabolic side effects impair the adherence [15]. Study done by Awad [36] also pointed out the two reasons for non-compliance, one important reason being the side effects of drug. Psychological treatment alone and/or in addition to drug therapy helps to increased compliance [37]. Insight-oriented psychotherapy and family therapy helps to promote compliance [9]. Since none of our patients received psychotherapy due to unavailability of clinical Psychologist in our context, this may be one of the contributing factors for poor compliance. Future studies have to prove this assumptions.

Co-morbidity is common in schizophrenic patients which increased the likelihood of discontinuation of medication. 14% of respondent have co-morbid illness other than substance abuse, of them majority of them have physical illness. Studies suggest that co-morbidities like hypertension, diabetes, metabolic disorders and personality disorders are found higher among schizophrenics which increased 4-5 fold risk of non-compliance than general population [38,39]. Similarly, Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study also agreed with this and demonstrated the similar results [40]. On the other hand, co-morbidities of substance use was found in 19% of the respondent of which majority (58%) of them use tobacco/nicotine and 16% use alcohol. Past study suggest that schizophrenic patient use nicotine to reduce the hallucination and it subsequently increased risk of non-compliance [9]. Other studies considered drug and alcohol to be a major risk factor for non-compliance [41,42].

In the context of Nepal, very few numbers of psychiatrists available and are basically centered to capital city. So, they are not able to give more time to their patients. Another reason may be their focus on private practice. In our study only 48% have easy accessibility of doctor and 13% of them got average more than 10 minutes during each visit. Time given to psychiatric patients is the predictor of better outcome [28]. Around one third of the respondent received awareness from doctor and some found uncooperativeness and hostility attitude. Un-cooperativeness, unavailability or hostility attitude of doctor may lead to precipitation of non-compliance [25]. This poor relationship of patient with therapist may contribute as a risk factor for non-compliance [25].

Conclusion

The study explored numerous factors associated directly or indirectly with poor treatment compliance. Numerous illness and treatment related factors contributed for poor treatment compliance in Schizophrenia need to be identified at the earliest for better treatment outcome. Mental health promotion is vital to reduce the stigma. Affordability and free availability of drug by government is needed to poor patient in order to improve compliance. Treating physician need to treat patient ethically and must provide sufficient time during treatment.

Disclosure

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