"ASSESSMENT OF RECOVERY IN PATIENTS WITH SCHIZOPHRENIA: A ONE YEAR CROSS SECTIONAL HOSPITAL BASED STUDY"

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Dr. N.M.Patil M.D.
Professor and Head,
Department of Psychiatry,
Jawaharlal Nehru Medical College,
KLE Academy of Higher Education and Research, Belagavi, Karnataka

Date:
Place: Belagavi

Dr. N.S. Mahantshetti M.D. (Paed)
Principal
Jawaharlal Nehru Medical College,
KLE Academy of Higher Education and Research, Belagavi, Karnataka

Date:
Place: Belagavi

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JAWAHARLAL NEHRU MEDICAL COLLEGE

(A constituent unit of KLE Academy of Higher Education & Research Deemed-to-be University)

Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category "A" by MHRD (GoI)

Nehru Nagar, Belagavi-590 010, Karnataka-India

Website : http/www.jnmc.edu
E-Mail : Principal@jnmc.edu

☎ Office :+91-(0)831 2471350
FAX :+91 (0)831-2470759

Ref. No. : MDC/PG/ Date :

To,

Reg No. BQ0117002
Postgraduate Student
Department of Psychiatry,
2017-18 Batch
J. N. Medical College,
Belagavi.

Sub: Acceptance Letter

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J. N. M. C. Belagavi.		

ABSTRACT

Introduction

Schizophrenia has long been viewed by consumers and clinicians alike to be a chronic illness with poor prognostic outcomes. After various attempts of operationalizing definitions of recovery, numerous studies have shown significant proportion of patients showing recovery.

Our study was taken up with the following objectives

Primary objective

1. To determine the point prevalence of recovery in schizophrenia

Secondary objectives

1. To assess factors associated with recovery in schizophrenia
2. To assess the stigma perceived by individuals who recovered from the illness.

Methods

Patients with established ICD-10 DCR diagnoses of schizophrenia were sampled from the OPD at a General Hospital Psychiatry Unit in India, and informed consent was taken. The patients and the caregivers were interviewed to determine whether the patients meet criteria for point symptomatic remission, complete remission, functional remission and recovery. The said entities were defined based on the operationalized definitions given by The Remission in Schizophrenia Working group. Tools used for assessment were the Brief Psychiatric Rating Scale (for assessment of symptom severity) and the Personal and Social Performance (for assessment of level of functioning). Subsequently,

patients meeting criteria for recovery were then evaluated for perceived stigma using the Discrimination and Stigma Scale -12

Results

Out of the total patients sampled, 42% showed point-symptomatic remission, with 31% showing complete remission, 41% with functional remission and 25% meeting criteria for recovery. Being married and being on treatment with Clozapine was found to be associated with higher recovery rates. Every recovered patient of schizophrenia reported to have experienced stigma and discrimination is at least one area of life. Of these, the areas of life with highest rates of discrimination included in the neighbourhood (96%), marriage (76.47%), role as a parent (68.75%), finding a job (54.54%), pregnancy (53.84%), making/keeping friends (52%) and religious practices (52%). 93.75% admitted attempting concealment of their illness, and 76% reported being avoided by others.

Conclusion

The prevalence of recovery in schizophrenia occurs in a quarter of the cases and hence is probably not as morbid a diagnosis as previously believed to be. All the recovered patients of schizophrenia reported facing discrimination in their lives.

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INTRODUCTION

The foundation for the nosology of schizophrenia was laid by Emil Kraepelin in the late 1800. He was a pioneer who described the 2 major groups of psychoses and called them manic-depressive psychosis and dementia praecox. The basis of his delineation of these 2 categories was the long-term course and prognosis of these illnesses. According to his understanding, dementia praecox referred to a cluster of symptoms leading to loss of harmony between the intellect, volition and emotion. He later went off to describe the subtypes, namely paranoid, catatonic and hebephrenic.

The current nosological term 'Schizophrenia' was first used by EugenBleuler to refer to the "splitting of the mind" as he understood the illness to be. He also gave the popular 4 As the denote the 4 primary symptoms, namely abnormalities of association, autistic behaviour, affective blunting and ambivalence. He too talked about the loss of coordination between thought, emotion and behaviour being the hallmark features of the illness.

The first attempt to make the diagnosis more reliable, it was Kurt Schneider who gave his first-rank symptoms which were compiled using symptoms that were most characteristic of schizophrenia. It was first in DSM-III that schizophrenia was defined much more narrowly, and it laid emphasis on the Schneiderian understanding. From then on, diagnostic

criteria for schizophrenia have been defined, redefined and refined over time to the current level of understanding.

Schizophrenia currently remains to be one of the important psychiatric illnesses with significant burden across various countries. The prevalence of schizophrenia in the Indian population measured by Dube and Kumar was reported to be 2.6 per 1000 population at risk[1]. Incidence in India measured by Wig et al was reported to be 0.38 per 1000 population at risk in the urban areas and 0.44 per 1000 population at risk in the rural areas.[2] schizophrenia has long been viewed as an illness with poor prognosis with low chances of recovery. But in the recent times, this morbid view has been challenged. Numerous studies discussed later, have reported a significant proportion of patients showing recovery from the illness. As the concept of recovery began gaining importance, numerous attempts were made to define the various dimensions of recovery, and what amounted to achievement of recovery. The concept of recovery in schizophrenia is different from that seen in a physical illness. In a physical illness, the absence of symptoms and normal investigation results amounts to being considered recovered. But in schizophrenia, mere absence of symptoms cannot be equated to recovery since it doesn't amount to return to the individual's premorbid state. Studies exploring this concept of recovery and measuring its prevalence are few in our country. Hence, our study was born out of the need to fill in this

knowledge gap, and explore the aspects related to schizophrenia in our country's population. We looked into the point prevalence of recovery in schizophrenia, the factors associated with recovery and lastly looked into the stigma and discrimination associated with the illness.

OBJECTIVES

- PRIMARY OBJECTIVE:
  - To assess the point-prevalence of recovery in patients with schizophrenia.

- SECONDARY OBJECTIVES:
  - To assess the factors associated with Recovery in Schizophrenia.
  - To assess the extent of perceived stigma and discrimination.

REVIEW OF LITERATURE

Schizophrenia is one of the major psychiatric illnesses associated with significant morbidity and burden to the society. The understanding about the illness has been changing since decades and diagnostic and management modalities have been evolving constantly. In the history of Schizophrenia, one of the first and best-known personalities to have classified mental illnesses into various categories was the German physician Emil Kraepelin. He coined the term "dementia praecox" to describe some of his patients who presented with the symptom cluster which we now relate to schizophrenia. He believed it to be a disease of the brain, a form of dementia. Hence the name to indicate the early onset of an illness which otherwise is expected to only occur late in life. Kraepelin described schizophrenia as a condition that leads to progressive mental deterioration, lack of drive and will, causing significant loss of social competency. But its widely accepted now that schizophrenia is a multifactorial illness involving abnormalities in the neuronal function of the brain, irregularities in the information processing, and behaviour. This means multiple windows to be discovered where intervention modalities need to be applied in the form of biological, environmental and psychosocial approaches [3].

Views of Schizophrenia as an Illness

Schizophrenia is generally seen as an illness involving a fairly chronic course with poor prognostic outcomes [4]. DSM-III's take on schizophrenia said, "a complete return to premorbid levels of functioning in individuals diagnosed with schizophrenia is so rare as to cast doubt upon the accuracy of the diagnosis." [5] Likewise, DSM-IV pointed out "the unlikeliness of affected individuals making a complete return to full functioning." [6] But the advent of atypical antipsychotics brought about renewed hopes

of potentially better treatment modalities and more favourable outcomes in areas of negative, cognitive and affective symptoms, all that with lesser propensity to cause extrapyramidal symptoms [7,8].

Studies indicated that only a small proportion of patients with schizophrenia can recover from the illness [9]. Though up to 90% of patients with first episode schizophrenia may have significant reduction in psychotic symptoms within the first year, just about 10% recover occupationally and about a third manage working on part-time basis [10]. Most were found to be unemployed by the end of about 5 years of illness [11]. A morbid, chronic path is traced by the illness in nearly half of patients of schizophrenia [12–15].

Heterogeneity and its importance

The significance of heterogeneity in schizophrenia must not be undermined by practitioners and caregivers. It must also be noted that even with the best of intervention measures applied to a population of patients, the outcomes can still be represented in a broad range of possibilities [3]. In spite of various studies convincingly showing heterogeneity in outcomes[16], the pessimistic views have found place in modern understanding and practice of Psychiatry among researchers, clinicians and consumers alike. Besides the negative point of views, stereotyping and stigma can further delay the process of recovery. In a review article, Liberman and Kopelowicz (2005) highlight that the clinical experience from the past few decades seems to point towards schizophrenia patients attaining long periods of sustained remission from symptoms along with fairly normal level of psychosocial abilities. They also summarized numerous longitudinal studies showing similar outcome measures [17]. Hence, in recent times, this widely held belief is often being doubted [18].

Over the past few decades, a substantial amount of data and evidence has been produced in the areas of incidence, prevalence and mortality associated with schizophrenia [19–21]. Research into the field of defining recovery and measuring variables associated with it have picked up pace too. The Massachusetts Mental Health Centre 2 Study conducted by Vaillant (1978) showed that 61% of patients with schizophrenia who had remitted previously when followed for an average of 10 years, continued to remain in remission while 39% went on towards a chronic course [22]. In a large sample study done by Stephens (1978) consisting of 472 schizophrenia patients, 143 were followed up for 10 years. It was reported that 24% of the showed recovery, 46% showed improvement and 30% remained status quo [23]. Many more scholarly articles related to the outcomes have been published in the last 3-4 decades [24–27].

In a review article by McGlashan (1988), 10 different studies conducted across North America, each conducted over a minimum of 10 years, have been described. In summary, he derived the message that schizophrenia was a chronic illness with prognosis poorer than other major mental illnesses, with association with higher risk of suicide and physical illnesses. Yet, an important observation being the heterogeneity of outcomes [24].

Concepts of Recovery

The recent demands to transform mental health system into a consumer and family driven, and recovery focused system, have hastened the research on recovery in schizophrenia[28]. This has given rise to the need to define remission and recovery.

In an article published by Angst (1988), it is highlighted the controversy the existed in the diagnostic concepts involved in schizophrenia at his time. He informed of that despite efforts to standardize the diagnostic processes, significant differences

were observed between diagnoses in various countries. In conclusion, he expresses the need to have multiaxial or multidimensional definitions for diagnosis of schizophrenia to be able to subsequently come up with outcome results that are valid and reliable [25].

The important initial step in purview of measuring recovery in schizophrenia is to adequately define it, while exercising caution to make sure that they facilitate easily replicable research that can churn out reliable measures of outcomes [3]. Recovery can't simply be 'feeling good about oneself', 'self-determination' or 'accepting one's illness'. For it to be something more than that, objectively measurable criteria need to be devised, operationalized and validated [29]. Research methodologies related to recovery in schizophrenia were made possible due to the evolution of reliable and replicable methods of diagnosing and quantifying the symptoms [30,31].

Members of "Remission Working Group" describe remission as "a state in which patients have experienced an improvement in core signs and symptoms to the extent that any remaining symptoms are of such low intensity that they no longer interfere significantly with behaviour and are below the threshold typically utilized in justifying an initial diagnosis of schizophrenia." Hence, remission is described as "a necessary but not sufficient step towards recovery." But practitioner must also be advised that it's their duty to take due care that the patient or caregivers do not confuse recovery with cure [32].

Achievement of symptomatic remission only denotes a part of the patients journey towards recovery. It has been observed that patients who showed significant improvement in social and occupational areas in addition to symptomatic remission had lesser need for support from others and also required much lesser health care

resources [14]. Functional recovery is one of the important dimensions of recovery and has been used as one of the criteria to define recovery in terms of various measures. Functional recovery depends on the quality and consistency of therapeutic care provided and therapeutic alliance established. Skill training, which involves developing abilities that directly aid in succeeding in societal performance, is one such important service that enables the individual to be capable enough to climb the ladder of job, income, basic comforts and finally, better quality of life [3].

Interestingly, it was noted in a study that there existed many patients who had reached functional remission while not being symptomatically remitted [33]. This has been observed in a few other studies as well [34,35]. It was hence proposed by Wunderink et al. (2009) that the patient's report of having achieved a state of well-being may not in fact be a relevant factor in recovery from schizophrenia. Yet many conceptualizations describe recovery to be a subjective perception of self-wellbeing, rather than a definitive end point in the continuum of illness [36].

An article published by Liberman and Kopelowicz (2002) outlines the need of the 21st century to push for recovery in schizophrenia as a goal rather than just controlling symptoms [3]. They highlighted the need to define recovery in ways, to facilitate research that promotes replicability and comparability, in order to further develop appropriate treatment and management strategies in schizophrenia. The article stresses upon the need to view recovery as improvement in functional and symptomatic outcomes of patients, irrespective of the severity, and to lay down realistic dimensions of measuring recovery. It further points out the responsibility of the clinician to convey to the patient and the caregivers that recovery must not be mistaken for cure. In an article published by Whitehorn et al. (1998), suggested

setting 50% recovery rate from first episode schizophrenia as a realistic goal to achieve [37].

Recovery in schizophrenia has been defined by various interpretations and measures by quite a few authors in the past. The need for multidimensional definitions for recovery has been suggested by Menezes et al. (2006) [38]. Functional remission has become one of the important measures in defining recovery in schizophrenia. Various studies have noted that failure of the individual to function adequately in spite of absence of any residual symptoms occurs frequently in bipolar disorder [39], depressive disorders [40] and also anxiety disorders.[41] Some researchers have recommended that the measures to assess recovery in schizophrenia must consist of general social functioning in addition to symptomatic remission.[42,43]

One of the early studies that attempted to measure outcomes in schizophrenia was the Vermont Longitudinal Study of Persons with Severe mental Illness by Harding et al (1987). The study considered recovery to be the absence of psychotic symptoms, while being off any psychotropic medications, leading a social life which was indistinguishable from that of neighbours, while holding a job for pay or volunteer. On assessing patients, they found that of the 82 patients of schizophrenia assessed, 68 percent showed no features of schizophrenia while 45% showed complete absence of any psychiatric symptoms [44].

In 2002, Liberman et al (2002) proposed an operational definition of recovery from schizophrenia. The dimensions of measurement were symptom remission, vocational functioning, independent living and peer relations [45]. Further, symptom remission was declared when the patient had score of 4 or less on each of the positive and negative symptom items of the Brief Psychiatric Rating Scale (BPRS) for a period of two consecutive years. Criteria for vocational functioning included

successful employment in a job (or attendance at a school) for at least half time for 2 consecutive years. Independent living consisted of the patient living on one's own without day-to-day supervision and engaged in self-management of funds and medications. Peer relationships included at least once a week interaction and socialization with a non-family individual. These criteria were put forth to focus groups that included researchers, mental health professionals and patients, seeking validation of the various dimensions. The criterion on independent living was endorsed by three-fourths of the respondents, while two-thirds endorsed the criteria on work and social relations.

The Remission in Schizophrenia Working Group, headed by, Andreasen et al. (2005), built the construct for recovery based on Liddle's three-dimensional model of schizophrenia [32]. It consisted of a psychomotor poverty dimension (poverty of speech, decreased spontaneous movement, unchanging facial expression, paucity of expressive gesture, affective nonresponse and lack of vocal inflection), a disorganization dimension (inappropriate affect, poverty of content of speech, tangentiality, derailment, pressure of speech and distractibility) and a psychoticism dimension (hallucinations and delusions). The study defined remission by selecting specific items from SAPS and SANS, PANSS and BPRS, falling under the 3 dimensions. Symptomatic remission was determined by simultaneous ratings of 'mild' (SAPS, SANS </=2, PANSS </=3, BPRS </=3) on all the included items, for a duration of 6 months.

Literature on Recovery

The Iowa 500 study published in 1975, consisted of patients enrolled between 1934 and 1944 and followed up for nearly 35yrs. It was a time when no clear

operational criteria for recovery were being explored. Using 3 parameters, namely, Employment, Physical health and Mental health, the authors came to a composite scoring that categorized the results under the headings of Severe, Moderate or No psychiatric disability. They finally reported that of the 200 patients of schizophrenia diagnosed using the Iowa Structured Psychiatric Interview (ISPI), 18.7% qualified to be placed under the category indicating 'No psychiatric disability' [46]. Though the diagnostic methods and criteria as well as the operationalized criteria for recovery have undergone significant changes since the publication of this study, it's to be noted that the proportion of patients hovering around the recovery end of the spectrum of outcomes a few decades ago is quite consistent with the more recent study findings. The strength of this study lies in the very long follow up duration.

In a 15yr longitudinal follow up study on schizophrenia and other psychotic illnesses undertaken in the United States, outcomes of 274 patients with schizophrenia, schizophreniform disorder, other psychotic disorders were compared with a control group of non-psychotic disorders [13]. The patients were reassessed 5 times in the span of 15 years with the operational definition of recovery being an asymptomatic state, adequate psychosocial functioning and no psychiatric rehospitalization in a span of 1yr.The tools used were Schedule for Affective disorders and Schizophrenia, Harrow functioning interview for major symptoms, and the Levenstein-Klien-Pollack scale and Strauss-Carpenter Scale for assessment of functioning. The study results showed recovery rates of 10% at 2yr follow up and 19% or more on subsequent visits. 41% showed recovery at some point of time, whereas the number was 55% for schizophreniform, 67% for other psychotic disorders and 75% for non-psychotic disorders. Significantly less proportion of schizophrenics recovered compared to the other groups. No difference in recovery

rates were observed among the various subtypes of schizophrenia. It was also noted that schizophreniform disorder had higher rates of recovery than schizophrenia with 27% showing recovery on all follow up visits.

Another well recognized study, popularly known as the SOHO study, was undertaken for a duration of 36 months across 10 European countries and involved 1096 public and private psychiatrists and was published in 2008 [9]. Criteria for symptomatic remission was CGI-SCH scores of <4 for at least 24months duration, which is maintained up to 36th month. Functional remission was defined as the existence of positive vocational status, independent living and active social interactions for the same duration.The study also incorporated Quality of Life and defined it as scores of >/= 70 on the self-rated EuroQoL-5 Dimensions Visual Analogue Scale. With simultaneous achievement of all the above criteria, recovery was declared. The results showed 33% symptomatic remission, 27% adequate Quality of Life, 13% Functional remission and 4% Recovery. Recovery rates were significantly lower than other study results and this was attributed to the duration criteria that was more stringent than most other studies.

In their study conducted in Canada, Whitehorn et al. (2002) studied 103 patients of schizophrenia who received treatment in the Nova Scotia program. They found that 22% of patients showed recovery by the end of 6 months, and the proportion rose to 35% at the end of 1 year [47].

Robinson et al. (2004) conducted a study published in 2004 among 118 subjects who were followed up for 8 years. The study employed the recovery measures derived from the University of California at Los Angles and included symptomatic state, vocational functioning and social interactions, with the duration criteria being 2 yrs. At the end of 5 years, it was found that 47.2% of the subjects

achieved symptomatic remission, while 25.5% reached functional remission. The study concluded that full recovery, i.e. simultaneously meeting criteria for symptom remission and functional remission, was seen in 13.7% of subjects [48].

In a study done by a European Research team in Norway, it was found that half of the subjects had maintained their recovered state at the time of reassessment after 20 years from initial assessment [49]. They also found that environmental factors played an important role in recovery from schizophrenia, namely, family support, accessibility to services and the hope generated by the professional dedicated to the patient.

Wunderink et al. (2009) published the findings of their study on recovery in patients with first episode psychosis. Over half (52%) of their 125 subjects showed symptomatic remission, a quarter (26.4%) had functional remission and a fifth (19.2%) fulfilled both criteria, amounting to recovery [33].

More recently, a study conducted by Prikryl (2013) in the Czech republic aimed at providing an estimate of the point prevalence of remission and recovery in schizophrenia [50]. It encompassed 481 subjects who were tested using the operationalized definition given by N. Andreasen but omitted the 6-month duration criterion for asymptomatic state, and instead assessed for point symptomatic remission. 8 items from PANSS were selected to determine asymptomatic state and the max score was capped at 3 on each of the items. Functional remission was determined using the Personal and Social Performance Scale (PSP) which is a scale with better face validity than the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS) [51]. Of the 481 subjects, 258 (54%) met point symptomatic remission, 214 (45%) met complete remission, 124 (26%) met functional remission and 91 (19%) were found to have attained recovery. The study also noted that shorter

the duration of the illness, higher was the probability of reaching recovery, a finding consistent across many studies [11,52]. Interestingly, 15% of patients who were functionally remitted did not concurrently meet criteria for point symptomatic or complete remission.

A systematic review and meta-analysis of recovery conducted in 2012 encompassed data from 50 studies. The study resulted in 13.5% individuals found meeting recovery criteria. It also computed a median estimate of 1.4% as the yearly recovery rate, i.e. 1-2 individual attaining recovery every year [53].

Factors associated with Outcomes of Schizophrenia: Potential factors affecting Recovery

Since the concept of recovery has gained importance, the focus on ascertaining the factors contributing positively and negatively to recovery has also become an area for much curiosity and research. The heterogeneity of outcomes in schizophrenia itself may need be picked up and researched upon to detect those factors responsible for variations in outcomes, to help formulate management plans. Knowing the dynamics of how various factors may affect recovery will enable us to better predict recovery and recommend measures to iron out poor prognostic aspects of the patient's attributes, while promoting those that have a positive bearing on recovery. The notion that recovery from schizophrenia in middle or late decades of life is attributable to the disease 'burning out' due to advancement of age, has been shown by studies to be untrue, and that recovery demands adequate services to be delivered [54]. The prognostic factors related to outcomes of schizophrenia and other psychotic disorders have been studied extensively. But the possibility of extrapolating the same data to "recovery" is something that needs more objective evidence.

Age of onset

Onset of schizophrenia in younger age during the critical phase of neurodevelopmental maturation is implicated in the disruption of the processes. The regions involved include the prefrontal cortex and superior temporal gyrus [55]. The Comprehensive Textbook of Psychiatry identifies the early onset of illness being associated with the presence of significant negative symptoms [56]. The relationship of the age of onset of schizophrenia with the outcomes have been found to have mixed findings. In a study done by Wiersma et al.(1998) no significant association between the age of onset of illness and outcomes was found [57]. However, the association of better outcome for schizophrenia with later age of onset of illness has been implicated in some studies in the past [58–60].

Gender

The female gender has been identified in an article to be a good prognostic attribute [61]. Gender related difference in outcomes has been suggested by some studies in the past, stating recovery to be occurring with higher frequency among women [58,62]. A study noted that men suffered from more severe negative symptoms and worse social functioning when compared to women [63]. Individuals with schizophrenia enduring a more severe illness conferring them a poorer prognosis as compared to women was documented in a study by Goldstein et al. (1989) [64]. But some others suggest no such difference. In a systematic review of 11 studies summarised by Jääskeläinen et al.(2013), no significant gender based difference in recovery rates were observed[53].

Duration of Illness

In a study published by Emsley et al. (2006) after having followed up the patients for up to 2 years, it was noted that along with a few others variables, early

treatment response (first 6-weeks) and duration of untreated illness formed the important predictors of outcomes and symptom improvement patterns in first episode psychosis [11,65]. The same study was replicated and similar results were obtained, reinforcing the evidence on the 2 important variables [52]. There are a few more studies providing evidence of better outcomes associated with lesser duration of untreated illness [38,66,67]. Better baseline functioning is also associated with better prognosis [9,65]. A study by Buoli et al. (2012) found the longer duration of illness is associated with worse prognosis as it predicts poor response leading on to adverse outcomes [68].

Family history

Family history forms an important part of any history taking in the practice of medicine with many illnesses known to significantly predict patterns and outcomes of diseases. Research in this area in relation to psychiatric illnesses has been done for many disorders. Family history of schizophrenia plays an important role in schizophrenia as well. Affective blunting, bizarreness, catatonia, inappropriate affect and early onset of illness predicted psychosis in first-degree relatives [69]. A study conducted over 2 years in Spain showed that having a family history of mental illnesses, along with female gender and poor premorbid adjustment, was a predictor for the severity of negative symptoms as rated on SAPS/SANS [70]. Negative symptoms having an association with family history has been demonstrated by a few more studies [71–73]. Positive family history has also been demonstrated to have more severe course of illness [74–76] and poorer response to treatment [71,77]. Hence, it is expected that family history can help in predicting the prognosis and outcomes of schizophrenia and enable the clinician to apply enhanced management modalities for effective treatment.

Domicile

Environmental factors related to urbanization have been implicated to be a risk factor for schizophrenia. Initially thought to be due to the "geographical drift" hypothesis, some studies have challenged this belief [78]. The study detected a higher incidence among people residing in urban areas by a factor of 1.65 times [78]. A study involving 10,264 patients of schizophrenia examined over a follow up period amounting to 50.7 million person-years found that risk of schizophrenia grew with urban place of birth [79]. Similar finding have been demonstrated in another study that concluded that urbanization raised the risk of illness [80].

Cultural background

To study the culturally related variables associated with the diagnosis of schizophrenia, the International Pilot Study of Schizophrenia was undertaken by the WHO [81]. India and Nigeria were found to show significantly better outcomes at 2- and 5-year assessments when compared to the western data. This was later confirmed by the Determinants of Outcome of Severe Mental Disorders (DOSMeD) study which happens to be more stringent in its design [59]. It was also studied that patients from developing countries seemed to have significantly longer periods of asymptomatic states with better functioning, even when taken into account the lesser likelihood of them being on regular antipsychotic medications. These findings are further supported by evidence from the WHO Collaborative Project report by Hopper et al. (2007)[82]. Hence the fact that patients in developing nations have better prognosis is well established.

Marital status

The marital status is another attribute of an individual that needs to be explored. Getting married is a significant event in any person's life and may have a variable degree and form of impact over various areas of life. Being single either due to widowhood, divorce, separation, desertion of never being married are generally considered to carry poorer prognosis. Studies have shown that stress related to wedlock can be associated with a variety of psychiatric disorders [83]. Marriage can also confer better care for the patients in terms of increasing moral support, conferring additional favourable social status and may even aid in reducing stigma [84]. A study has even showed that the married status of an individual is associated with delay in onset of psychotic symptoms in schizophrenia by nearly a couple of years [59].

Subtype of schizophrenia

The 4 subtypes of schizophrenia have been classified based of the differences in presentations. Paranoid, Hebephrenic and Catatonic subtypes have predominant characteristics of positive symptoms, disorganization symptoms and catatonic symptoms respectively. Those not conforming to any of the above subtypes are classified as Undifferentiated. The subtyping of schizophrenia may have important predictive value in the course and outcomes of schizophrenia. A study conducted among 148 patients with initial ICD-10 diagnoses of a particular subtype of schizophrenia were followed up for an average of 23 years and various aspects of outcomes were examined. The study concluded that patients with an initial diagnosis of paranoid subtype tend to have a better prognostic outcomes when compared to the others [85]. In a study conducted by Fenton et al.(1991) comparing the natural courses of paranoid, hebephrenic and undifferentiated schizophrenia among 187 patients, it was determined that paranoid schizophrenia had the best prognostic outcome among

the 3 subtypes [86]. In another study done by Kendler et al.(1984), it was found that paranoid subtype had better outcomes when compared to that in non-paranoid subtypes. The study also states that no significant difference in outcomes was found among the non-paranoid subtypes [87].

Comorbid diagnoses

Comorbid occurrence of depressive and anxiety symptoms complicate matters and antagonize measures of quality of life. Hence, it's a necessity to tackle these issues effectively using evidence-based modalities like Cognitive-Behaviour therapy, apart from pharmacological approaches [88–92].

Substance use disorders occurring comorbidly with severe mental illnesses complicate the process of treatment and recovery. Hence, the importance of treatment of substance use disorders occurring comorbidly with schizophrenia, cannot be ignored. Such Dual diagnoses warrant more efficient management modalities for effective treatment. Long term multi-dimensional interventions coupling drug therapy with psychosocial measures have proven to be effective in furthering progress towards recovery in schizophrenia with associated substance use disorders [93,94].

Antipsychotic Medications

Numerous antipsychotics with a range of side effects are currently available. The efficacy of antipsychotics in treatment of psychosis has been found to be similar across typicals and atypicals alike, with neither of the groups showing a significant advantage over the other in causing symptom remission [95]. But it's been demonstrated in the phase 2B of CATIE study that Clozapine has better efficacy in treating psychosis when compared to other antipsychotics [96]. It has also been found to have lesser likelihood of the patient discontinuing due to lack of improvement when

compared to Olanzapine, Risperidone and Quetiapine. Hence, the use of Clozapine may be implicated in causing higher incidence of recovery in schizophrenia.

Adherence

Adherence to medication is reported by studies to be an important factor in the process of recovery with better outcomes associated with better adherence [9]. To establish the role of continued pharmacotherapy in the effective maintenance of remission in schizophrenia, Tauscher-Wisniewski and Zipursky (2002) explored the topic and arrived at the recommendation that antipsychotic medications be continued indefinitely even for patients who showed complete recovery from a first episode of schizophrenia [97]. The argument made here was that the experimentation with the patients by reducing or stopping the medication to probe for possibility of relapse tends to push them off the edge causing symptoms re-emergence. This is further validated by another study that shows that individuals who had remitted with effective treatment had an episode of relapse during the following 18 months due to withdrawal of medications [98]. Yet another study conducted in 2007 yielded results stating that 40% of patients with schizophrenia not on any antipsychotic medications showed recovery, whereas just 5% of patients on medications showed recovery [99]. This is explained by the authors to be possibly due to data indicating unmedicated patients having more resilience and better potential for prognosis than the ones on antipsychotic medications.

Family Support

The role of families being a pillar of support for the patients of schizophrenia has been well established by the IPSS report by WHO [81]. Studies have shown that involvement of the family in the treatment and rehabilitation of schizophrenia helps in cushioning stress experienced by the patients and hence prevent relapse, aid recovery

and improve psychosocial functioning [100]. The odds of recovery from schizophrenia drastically improve once the family is enabled to deal with issues through enhanced communication and problem-solving approaches, along with increased utilization of the available services [101,102].

Subjective factors

Some subjective factors may have a bearing on the process of recovery. Hope for a better-quality life is noted to be part of the health of the therapeutic alliance established. Hope can further help the patient to find motivation for self-care and improve compliance which are definitive steps in the direction of recovery [103]. Hence proceeding with a sense of hope, self-control, self-reliance and self-help, is an important ingredient for favourable results [3]. Self-esteem is another factor that has generated consensus for playing a role in the process of full recovery [104].

One of the important factors associated with numerous mental and physical disorders happens to be the expectation that clinicians, patients and caregivers, have on the therapeutic intervention itself [105]. It is to be noted that an excessively optimistic clinician may have deleterious effects on the negative symptoms of the patient's illness. This has been linked to the well-known fact that implicit memory is largely intact in patients with schizophrenia [106]. This enables them to assimilate subtle non-verbal cues and gestures and behaviours linked to interpersonal interactions without their conscious awareness [3], leading to adverse effects ultimately affecting the process of recovery.

Considering the limited literature on recovery prevalence available form India, it becomes imperative to know and understand the ground reality about the outcomes of the illness, so as to manage the patients better, and to provide the care givers hope without any exaggeration.

Stigma and Discrimination

Stigma refers to the derogatory response of the society towards an individual due to his/her affliction or association with an illness. It has been described to be an "attribute that is deeply discrediting" [107] leading to the "social devaluation of a person" [108]. Perceived stigma refers to the negative social responses and experiences, as faced by the afflicted individual. Some narratives of patients suffering from mental illnesses indicate that the stigma itself is perceived to be more distressing than the illness itself [109]. People are known to face stereotyping and discrimination due to stigma associated with them. It can bear a wide range of adverse effects like unemployment, isolation, poor self-esteem, shame, loss of all hope, etc [110,111]. Patient may accept the prejudiced status and this may reinforce the negative self-attributes [112,113]. The effects exerted by stigma over different individuals significantly differs from person to person [114,115]. Some may respond with empowering attitudes against discrimination, whereas other may develop self-stigma leading to low self-esteem.

One of the adaptation responses of an individual to stigma is concealment. It may help in facing lesser amount of discrimination but at the cost of helplessness, hopelessness, shame, guilt, internal distress and the battle between disclosure vs secrecy within oneself [116–118]. Stigmatized patients may expect to be mistreated and discriminated causing them to resort to refraining from seizing opportunities which they otherwise would have taken advantage of [109,113,119]. Not only the patients, but also family members have been noted to attempt concealment of the patients illness to avoid undue stigma to the patient as well as the family [120]. A study documented that disclosure of the illness was concerning for the patient and family members particularly in the setting of marriage, and it was often concealed from the spouse and in-laws [119].

Reasons for stigma

The American accounts of stigma being related to themes of violence and dangerousness was suggested to be culture-specific to the United States since in the Indian scenario, the reasons for stigmatization revealed were social disapproval, suspicious outlook, inappropriate sexuality and disorganized behaviour [120]. It is recognized that discriminatory and stigmatizing responses from people were more likely to occur when the patient had attributes of being a male, belonging to a lower socio-economic status, having aggressive and unpredictable behaviours, and having lesser social integration.

Use of mental health services and visiting a psychiatrist is recognised to be one of the important factors for the development of stigma [121]. In a qualitative study from India, it was highlighted that faith healing in religious places was perceived to be more acceptable from a cultural point of view when compared to visiting a psychiatrist [120]. But in the same study, another theme emerged wherein by virtue of effective allopathic treatment of the patient led to significant reduction in socially inappropriate stigmatizing behaviours, which culminated in affording credibility to the allopathic explanation for the illness.

Impact

It's not surprising to note that as a consequence of being stigmatized, the individual may develop shame, low self-esteem, hopelessness, unemployment, etc which happen to be predictors of suicidality [122]. Numerous studies have yielded results establishing the association between perceived stigma and suicidality [123–126].

People are known to keep away from seeking medical help owing to the stigma and prejudice that comes with being associated with mental illnesses [127]. It was

also noted by a study in Bangalore that traditional forms of help like faith healers and black magicians is seen as a more acceptable means of remediation when compared to seeking allopathic help in our country [120]. A study done among the rural Maharashtra population revealed a striking finding that promoting the biological explanation for mental illnesses in a bid to destigmatize them actually caused further aggravation of discriminatory attitudes of the people [128].

Stigma not only affects the individual with the attribute, but also those associated with him/her, like caregivers and immediate families. This was revealed in a study conducted in Bangalore, India, where the concerns reported by the interviewees most often were related to inability or hinderance caused in the process of marriage of not only the affected individual, but also his/her relatives in the family [120]. Hence, it was noted that there's a tendency to withhold word about the illness, within the family, in view of the above stated concerns. Its even known that family members instruct the patients to avoid talking and revealing his/her illness to outsiders and even told to stay indoors [119]. A study among the Indian population revealed that male patients with schizophrenia faced discrimination predominantly in areas of employment whereas among the females it was with regard to marriage and pregnancy [129]. It has also been documented that patients with mental illnesses like schizophrenia tend to not be respected by the patient's own family members [130].

In a study by Koschorke et al (2014) in India, it was found that 42% of patients reported having suffered some form of negative discrimination during the past one year when rated on the DISC-12 scale which covered 20 areas of life. Nearly 20% suffered in atleast one of the 20 areas of life, whereas 10%, in greater than 4. The study documents the popular reactions like "avoided by others", "treated differently or with lack of respect" and "teasing or negative comments" reported by the patients in

the qualitative interviews. 52% were reported to have engaged in active avoidance in various areas of life in a bid to stay away from discriminatory treatment anticipated by the patients. Nearly half owned up to have been unwilling or reluctant to share information of their mental affliction [119].

The top 5 impacts of stigma detected in a study in Chennai, involving interviews with the caregivers of schizophrenics were, depression in the caregivers, difficulties in marriage, worry that people might find out about the illness, differential treatment in neighbourhood and the necessity of secrecy regarding the affliction [108].

Data about the stigma and discrimination faced by patients recovered from schizophrenia has been accumulating in recent times. However, more research is necessary. It is possible that patients once in remission or recovery may begin to see a decline in the negative reactions they get subjected to, owing to the reduction in stigmatizing behaviour on the patients part. Or it may so happen that the labels continue to exist causing plateauing of negative attitudes at best, or further worsening of status due to propagation of the news over time.

Whatever be the outcome, it is well established from the various studies discussed above that there's a need for better understanding and measurement of stigma to devise effective strategies to prevent and reverse the damage done to the maximum extent possible.

METHODOLOGY

The study was designed as a cross-sectional epidemiological endeavour aimed at determining the point prevalence of recovery in schizophrenia. The site of sample collection was the Outpatient Department of the Department of Psychiatry at KLE Dr. Prabhakar Kore Charitable Hospital, Nehru Nagar, Belagavi. Data collection took place between 1st January 2018 and 31st December 2018. Purposive Sampling was employed to recruit patients.

Inclusion Criteria

1. Age 18 years and above
2. ICD-10 DCR diagnosis of Schizophrenia, irrespective of the subtype
3. On treatment with antipsychotics for a minimum period of 6 months
4. Drug compliant for at least 80% of the prescribed medication days.

Exclusion Criteria

1. Comorbid substance use disorders except Nicotine related disorders
2. Any other comorbid psychiatric illness
3. Chronic debilitating medical conditions

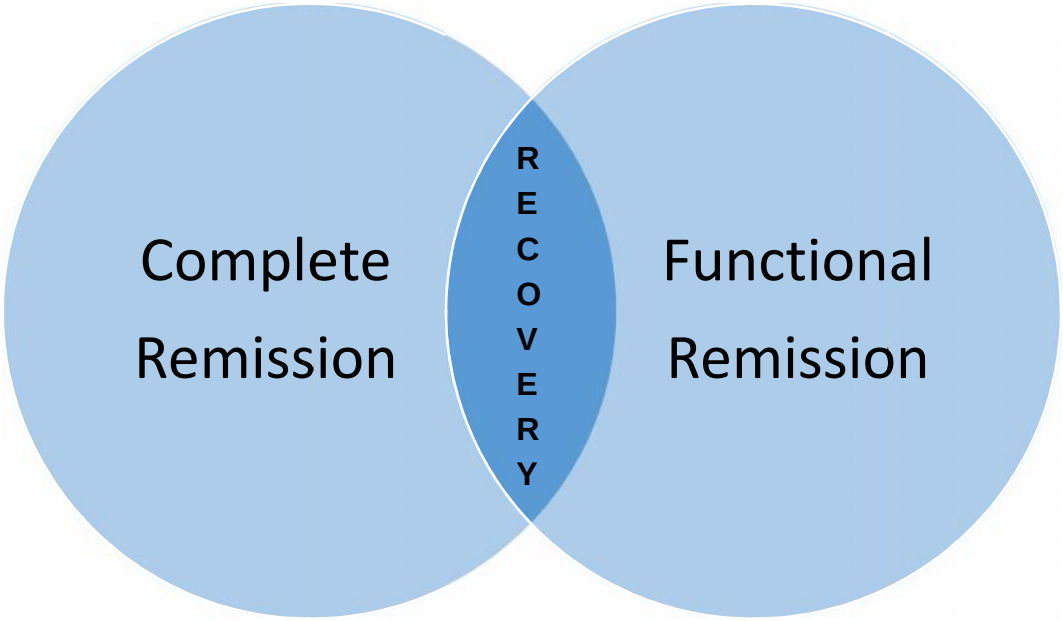

Figure 1. Representation of the criteria for Recovery

Operational Definitions

1. **Point-Symptomatic Remission**

   Absence of any active psychotic symptoms currently with a score of 3 or lesser for each item on Brief Psychiatric Rating Scale (BPRS).

2. **Complete Remission**

   Maintenance of symptomatic remission state for the past 6 months, assessed by caregiver accounts and available records.

3. **Functional Remission**

   Score of 71-100 on the Personal and Social Performance Scale (PSP).

4. **Recovery**

   Simultaneous fulfilment of criteria for Complete Remission and Functional Remission.

Sample size:

The sample size was calculated based on the recovery rate of 41% reported by a 15-year longitudinal follow up study conducted in the United States[13]. When the sample size was calculated with a permitted error rate of 5%, it yielded a result of 387. Considering the expected attendance of patients of schizophrenia in our setup, this was not feasible. Hence, the sample size was calculated with a permitted error rate of 10% as follows

Sample size = $4pq \div d^2$

$= (4 \times 0.41 \times 0.59) \div 0.01$

$= 96.76$

Therefore, the planned sample size was 100 patients.

Procedure:

Written informed consent for participation in the study was taken from the patient/primary caregiver after explaining about the study and its implications in the patient's own vernacular language. On obtaining the consent, the patient's records were assessed, and caregiver interviewed, to ensure adequate drug compliance existed. Further interview was conducted and the Mini International Neuropsychiatric Interview (M.I.N.I)[131] was applied to rule out co-morbid psychiatric illnesses or substance use disorders. Participants with other diagnosable psychiatric illnesses or substance use disorders were excluded from the study. All interviews and rating scales were conducted by the primary investigator after undergoing training and supervision to ensure valid and reliable assessments.

Demographic details were obtained from all consenting participants. They were then scored on the 18-item Brief Psychiatric Rating Scale to assess the current severity of symptoms. The patients' records and caregiver accounts were examined to

determine the duration of asymptomatic status. To assess the level of functioning, the Personal and Social Performance Scale was applied, and score determined on a scale of 0-100. Based on the scoring on these scales, the patients were determined whether they meet the definition and operationalized criteria for point-symptomatic remission, complete remission and functional remission. Patients simultaneously meeting criteria for complete remission along with functional remission were considered to have achieved recovery from schizophrenia.

Participants who were found to have recovered from schizophrenia were then interviewed and scored on the Discrimination and Stigma Scale – 12 to assess the severity and areas of stigma faced by the patients.

Tools

1. Mini International Neuropsychiatric Interview (M.I.N.I)

TheMini International Neuropsychiatric Interview (M.I.N.I)[131] developed by psychiatrists and clinicians in the United States and Europe is a popular structured diagnostic interview used for short but accurate detection of ICD-10 based psychiatric disorders. The interview is made up of modules designed for various psychiatric diagnoses, each of which consists of questions that must be answered with 'Yes' or 'No' responses. Depending on the responses generated, psychiatric diagnoses are made or ruled out. The interview is widely used for clinical as well as research purposes, with its validity and reliability established.[132,133]

2. Brief Psychiatric Rating Scale

The BPRS [134] is a popularly employed rating scale to assess psychiatric illnesses. It has been a validated and reliable tool in the assessment of schizophrenia [135,136]. The scale consists of 18 items, namely, somatic concern, anxiety, emotional

withdrawal, conceptual disorganization, guilt feelings, tension, mannerisms and posturing, grandiosity, depressive mood, hostility, suspiciousness, hallucinatory behaviour, motor retardation, uncooperativeness, unusual thought content, blunted affect, excitement and disorientation. Each of these are scored between 1-7, 1 being "absent", and 7 being "extremely severe" symptom. For items that are not assessed, a score of 0 is given.

3. **Personal and Social Performance Scale**

The PSP scale was developed for the assessment of the social functioning of patients, based on the component of the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS). The reliability and acceptability of the scale was established, and has also been found to have better face validity and psychometric attributes when compared to SOFAS [51]. It is a 100-point scale where 4 areas of functioning are explored in the scale, namely, socially useful activities, social and personal relationships, self-care and disruptive behaviours. Scoring is done based on the patient displaying "mild", "manifest", "marked" or "severe" impairment in the 4 areas of life. The scale has been found to be a quick and valid measure of patients functioning. Appropriate permissions were applied for from the proper authorities, and permission was granted for use in the dissertation.

4. Discrimination and Stigma Scale

The DISC-12 [137] was developed for the purpose of collecting information regarding the various ways in which a person suffering from a mental illness is influenced by his/her social or personal life. This scale collects qualitative and quantitative descriptions about some of the important areas of life. It consists of 32 questions that require to be answered on a 4-point Likert scale of "not at all", "a

little", "moderately" and "a lot". It also houses 4 subscales that can be categorized as "unfair treatment", "stopping self", "overcoming stigma" and "positive treatment". The scale has been used in many major studies in the past [138–140]. Results are generated in the form of Mean and Total scores or by an alternate scoring method that yields % areas of life where discrimination is reported [140].

Data Analysis

The sociodemographic data was computed by obtaining frequency distribution of the variables using tables and expressing them as percentages. The data pertaining to the frequency of the operational criteria being met was expressed in the form of percentages, supplemented with graphical representation using pie charts. Various attributes of the participants were tabulated comparing the recovery statuses and represented graphically using bar graphs. Fisher Exact test was used for the variables with 2 degrees of freedom, whereas Chi-Square test was used for those with more than 2 degrees of freedom. A p value of <0.05 was considered to be statistically significant.

The responses on the DISC-12 scale were converted to a binary score for each item (area of life) so as to yield answers in 'yes' or 'no' categories, i.e. discrimination faced or not. The responses were categorized based on the number of areas of life affected by discrimination and frequency distribution table was generated, supplemented with a pie chart representation. Data was tabulated to analyse the frequency distribution of the number of patients responding 'Yes' to the questions pertaining to specific areas of life, and represented with a bar graph.

RESULTS

117 patients who met the inclusion criteria were approached for inclusion in the study. Out of the 117, 10 did not meet the prerequisite of a minimum of 80% drug compliance, 3 did not consent for participation, 3 had comorbid alcohol dependence syndrome and 1 had co-morbid obsessive-compulsive disorder. Hence, 7 patients were excluded from the study, making the final sample size of 100 patient of Schizophrenia.

Table 1. Demographic profile and Patient characteristics

Characteristics		Number of subjects n (%)
Age (Mean±SD)		37.37±12.29
Sex	**Male**	55 (55%)
	Female	45(45%)
Domicile	**Rural**	63 (63%)
	Urban	37 (37%)
Socioeconomic status	**Lower**	62 (62%)
	Upper lower	24 (24%)
	Lower middle	8 (8%)
	Upper middle	4 (4%)
	Upper	2 (2%)
Religion	**Hindu**	89 (89%)
	Muslim	10 (10%)
	Christian	1 (1%)
Marital Status	**Married**	46 (46%)
	Unmarried	54 (54%)
Family history of Schizophrenia	**Yes**	12 (12%)
	No	88 (88%)

The mean age of the sample population was 37 years with a standard deviation of 12 years. Males (55%) were slightly higher in number than females (45%). A majority of the participants came from a rural background (63%) and belonged to the lower socioeconomic status (62%) as determined by the Modified B G Prasad classification of socioeconomic status which is based on the per capita monthly

income of the individual or family. Hindus predominated in the sample population (89%). Marital status was categorized into “Married” and “Unmarried” groups. The “Unmarried” group consisted of those who had never married, who were widowed or who had been separated/divorced for a period of the last one year. A slightly higher number of patients were unmarried (54%). About 12% of patients were found to have family history of schizophrenia.

Table 2. Patients with schizophrenia meeting operational criteria for Complete Remission.

Status	Yes	No	Total
Complete remission	31 (31%)	69 (69%)	100 (100%)

Figure 2. Patients with schizophrenia meeting operational criteria for Complete Remission.

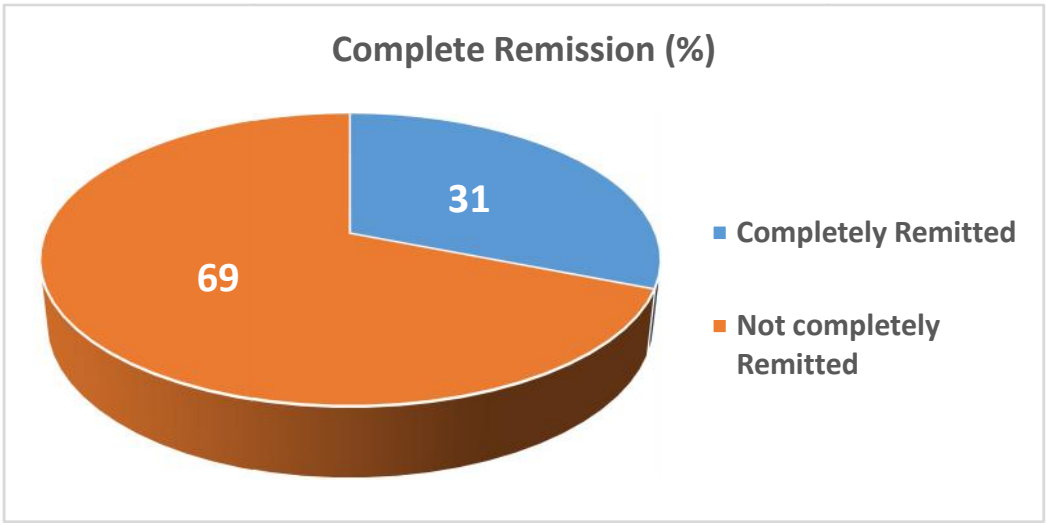

Table 2 and Figure 2 depict the proportion of patients achieving Complete Remission. Complete remission, defined by absence of symptoms maintained for a period of at least 6 months, was achieved by 31% of patients.

Table 3.Patients with schizophrenia meeting operational criteria for Functional Remission.

Status	Yes	No	Total
Functional remission	41 (41%)	59 (59%)	100 (100%)

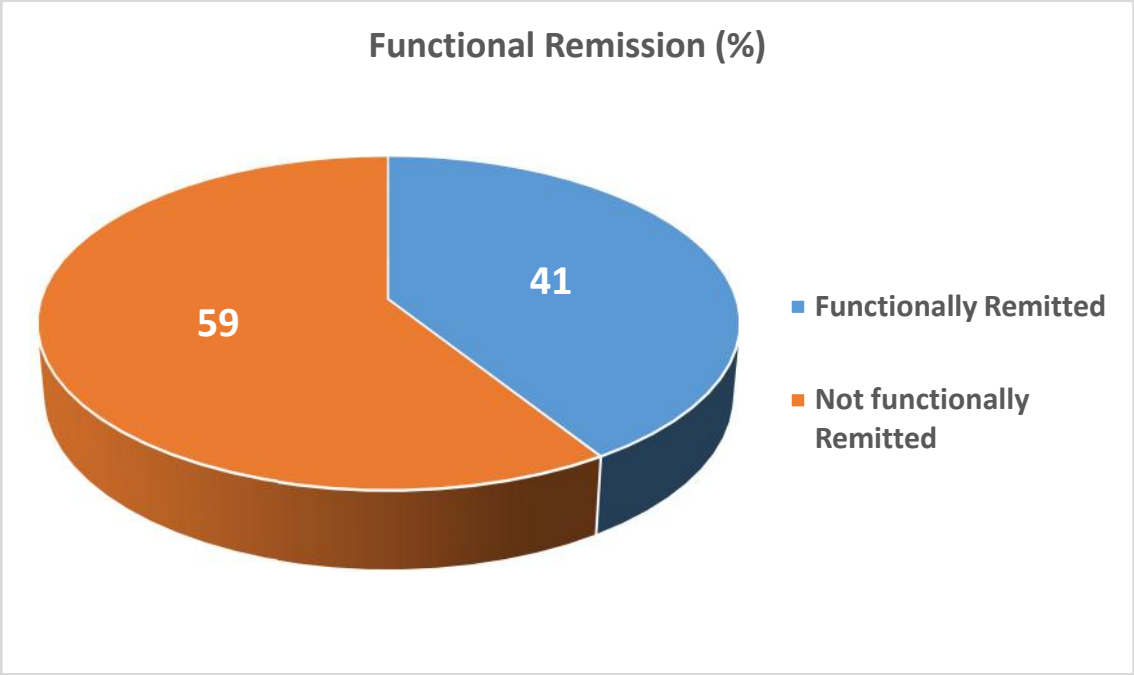

Figure 3.Patients with schizophrenia meeting operational criteria for Functional Remission.

Table 3 and Figure 3 depict the proportion of patients achieving Functional remission. Functional remission, defined by achievement of scores between 70 and 100 on the Personal and Social Performance Scale, was achieved by 41% of the patients.

Table 4.Patients with schizophrenia meeting operational criteria for Recovery.

Status	Yes	No	Total
Recovery	25 (25%)	75 (75%)	100 (100%)

Figure 4.Patients with schizophrenia meeting operational criteria for Recovery.

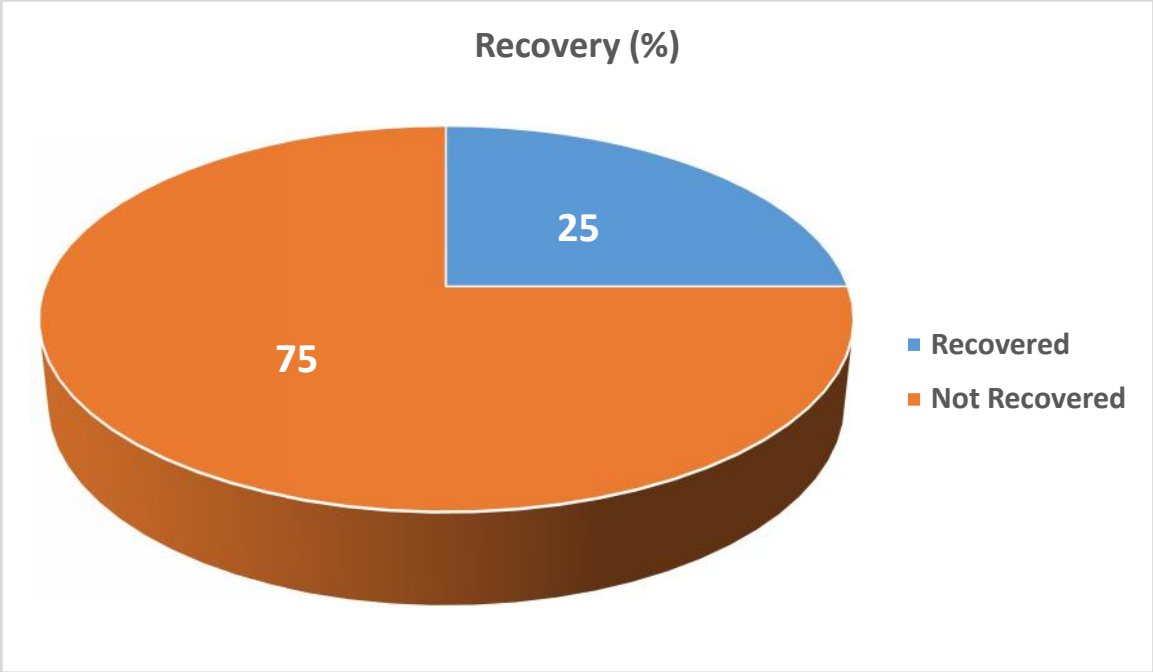

Table 4 and Figure 4 show the proportion of patients achieving Recovery. Recovery from schizophrenia, defined by the simultaneous fulfilment of criteria for complete remission and functional remission, was achieved by 25% of the patients.

Table 5.Comparison of Rates of Recovery among Males and Females.

Sex	Recovered	Not recovered	n	p Value
Male	12 (21.8%)	43 (78.2%)	55	0.49
Female	13 (28.9%)	32 (71.1%)	45	
Total	25	75	100	

Figure 5.Comparison of Rates of Recovery among Males and Females.

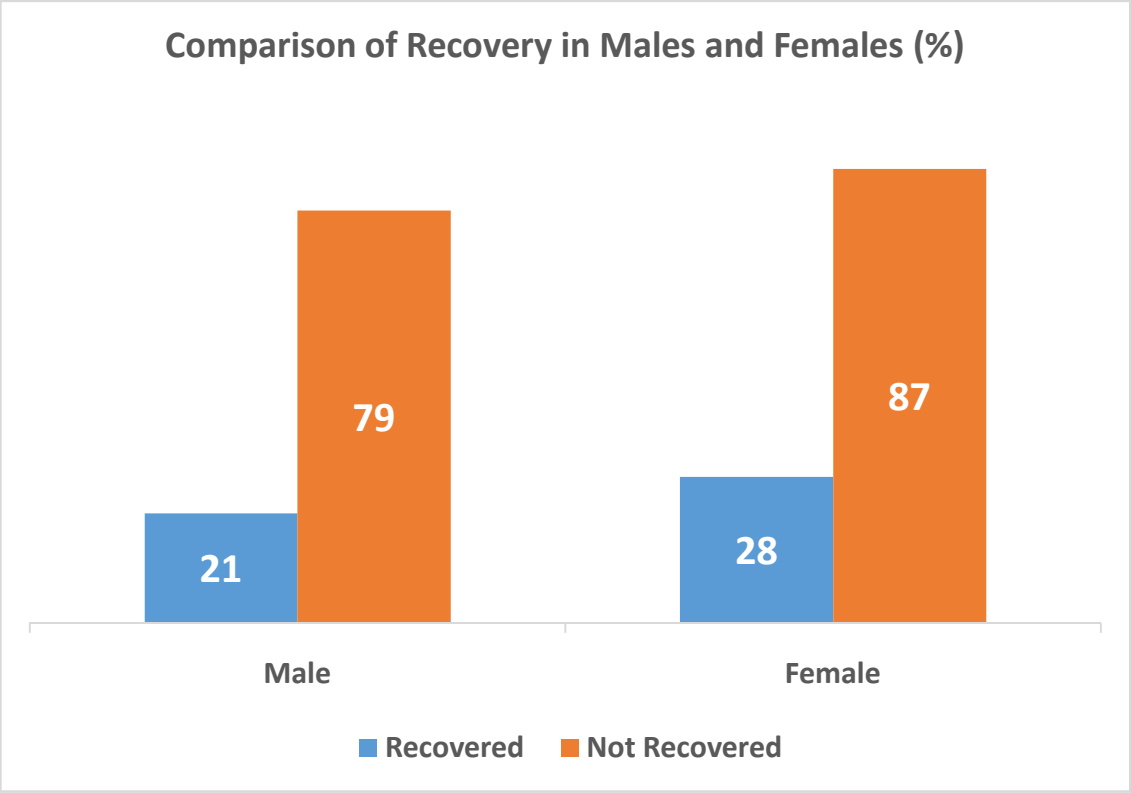

Table 5 and Figure 5 compare the recovery rate among males and females. Recovery was found to be occurring with a slightly higher frequency among females (28%) compared to males (21%). However, the difference was not statistically significant (p=0.49).

Table 6.Comparison of Rates of Recovery among different age groups.

Age in years	Recovered	Not recovered	n	p Value
<20	0 (0%)	2 (100%)	2	0.21
21-40	14(20.9%)	53 (79.1%)	67	
>41	11 (35.4%)	20 (64.6%)	31	
Total	25	75	100	

Figure 6.Comparison of Rates of Recovery among different age groups.

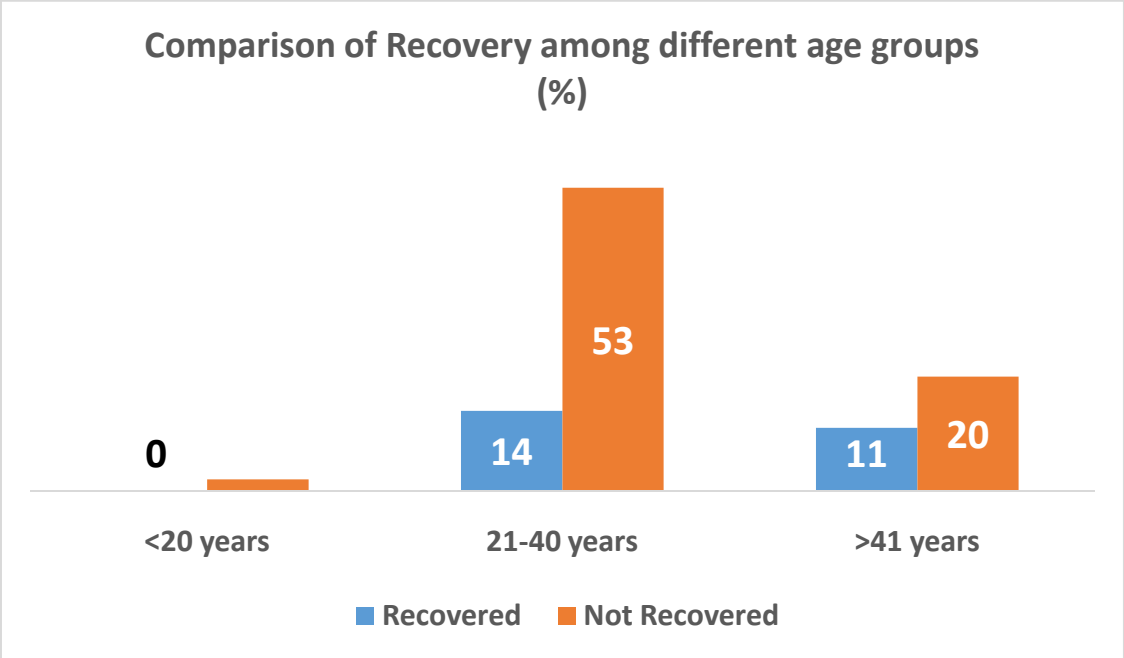

Table 6 and Figure 6 show the comparison of Recovery rates among different age groups. On comparing the recovery rates in patients grouped according to their age, it was observed that the proportion of recovery increased with increasing age, with 0% aged <20 years, 14% aged between 21-40 years and 35.4% of patients above 41 years of age showing recovery.

Table 7. Comparison of Rates of Recovery among Married vs Unmarried individuals

Marital Status	Recovered	Not recovered	n	p Value
Married	17 (37.0%)	29 (63.0%)	46	**0.019***
Unmarried	8 (14.8%)	46 (85.2%)	54	
Total	25	75	100	

Figure 7.Comparison of Rates of Recovery among Married vs Unmarried individuals

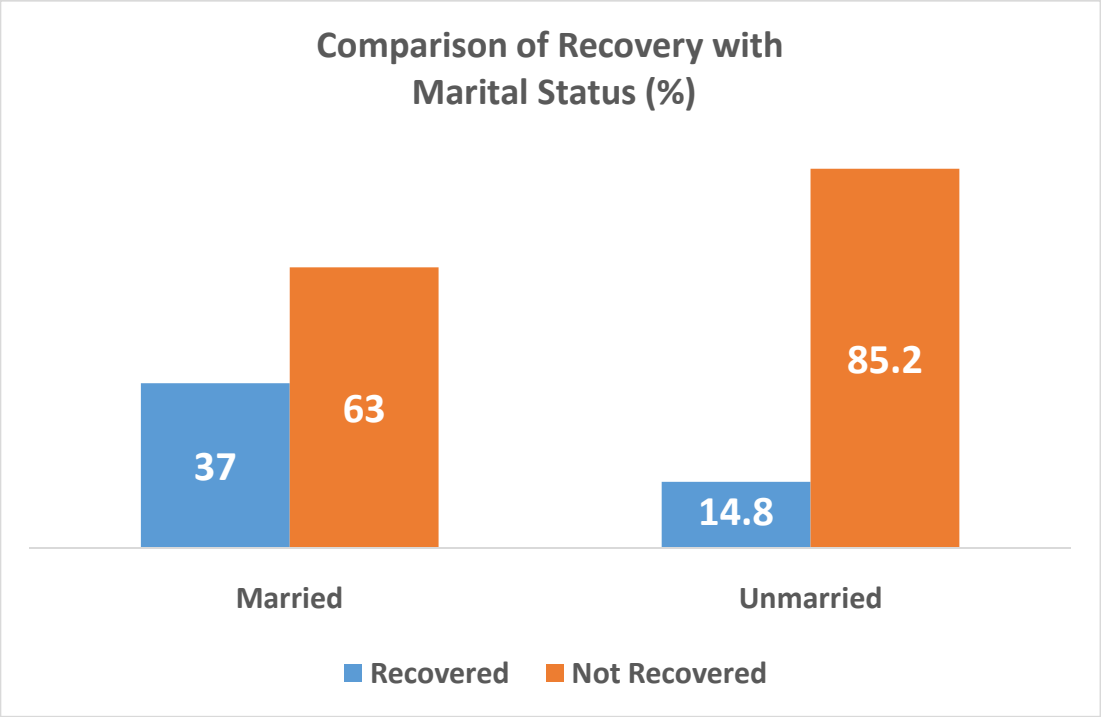

Table 7 and Figure 7 show comparison of rate of recovery among married and unmarried individuals. It was found that married individuals showed higher rate of recovery (37%). This was found to be statistically significant with a p value of 0.019. Note that the unmarried group includes those who never married, were widowed or had been separated/divorced for the last 1 year.

Table 8.Comparison of Rates of Recovery across Domicile.

Domicile	Recovered	Not recovered	n	p Value
Urban	7 (18.9%)	30 (81.1%)	37	0.34
Rural	18 (28.6%)	45 (71.4%)	63	
Total	25	75	100	

Figure 8.Comparison of Rates of Recovery across Domicile.

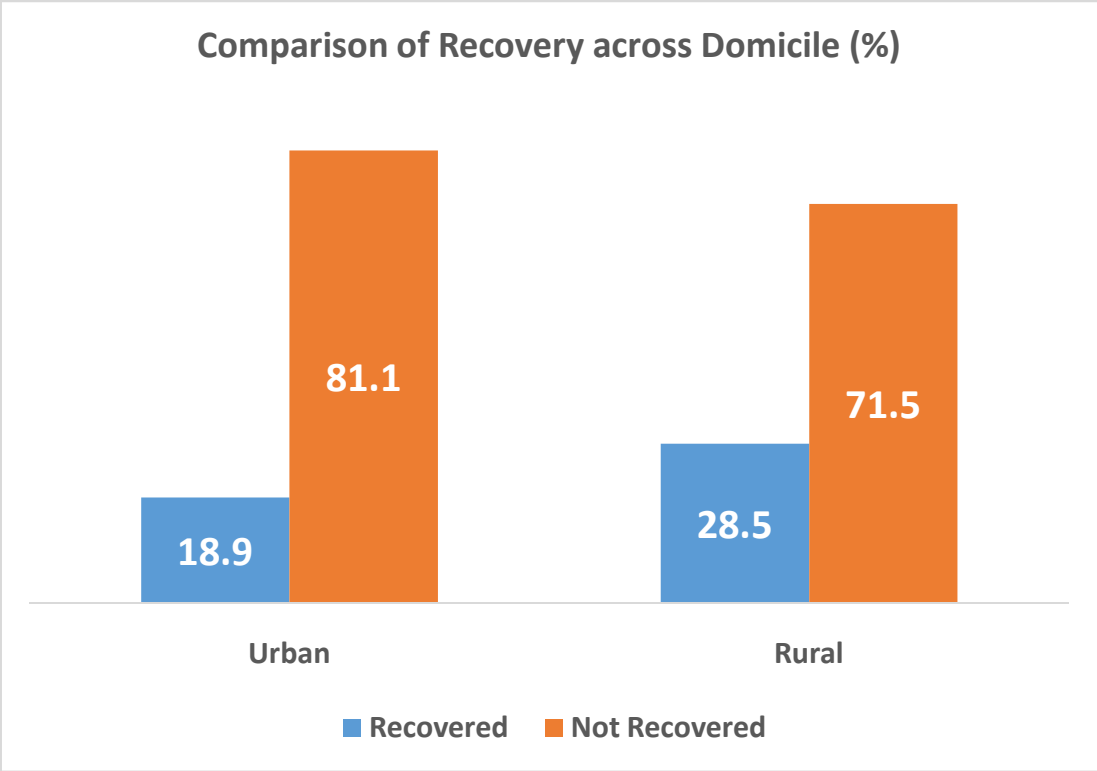

Table 8 and Figure 8 show the comparison of recovery rates across domicile. It was found that patients from a rural background showed higher prevalence of recovery (28.5%) when compared with their urban counterparts (18.9%). However, no statistical significance was detected (p=0.34).

Table 9. Comparison of Rates of Recovery among different Socioeconomic status.

SES	Recovered	Not recovered	n	p Value
Lower	20 (32.2%)	42 (67.8%)	62	
Upper lower	1 (4.2%)	23 (95.8%)	24	
Lower middle	3 (37.5%)	5 (62.5%)	8	
Upper middle	1 (25%)	3 (75%)	4	0.07
Upper	0 (0%)	2 (100%)	2	
Total	25	75	100	

Figure 9. Comparison of Rates of Recovery among different Socioeconomic status.

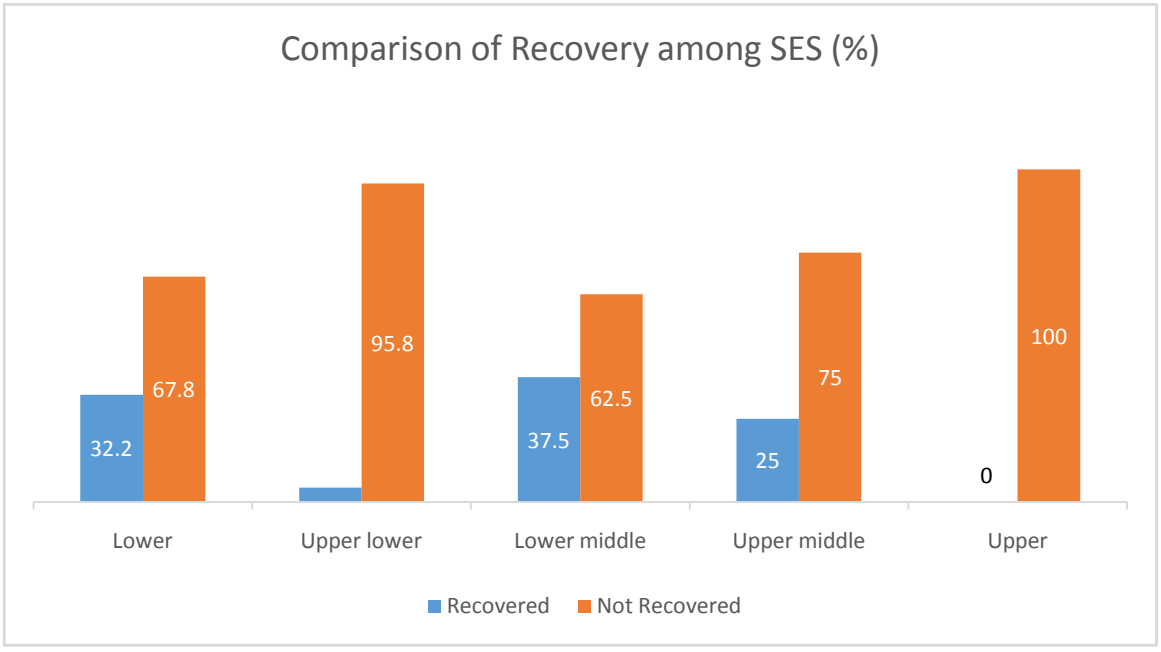

Table 9 and Figure 9 show the comparison of rate of recovery across different socioeconomic statuses. It was found that a recovery rates were higher among recovered patients belonging to the lower middle (37.5%) and lower (32.2%) classes. The trend was towards statistical significance, with a p value of 0.07.

Table 10.Comparison of Rates of Recovery among Subtypes of Schizophrenia.

Type	Recovered	Not recovered	n	p Value
Paranoid	22 (26.5%)	61 (73.4%)	83	0.55
Non - Paranoid	3 (17.6%)	14 (82.4%)	17	
Total	25	75	100	

Figure 10.Comparison of Rates of Recovery among Subtypes of Schizophrenia.

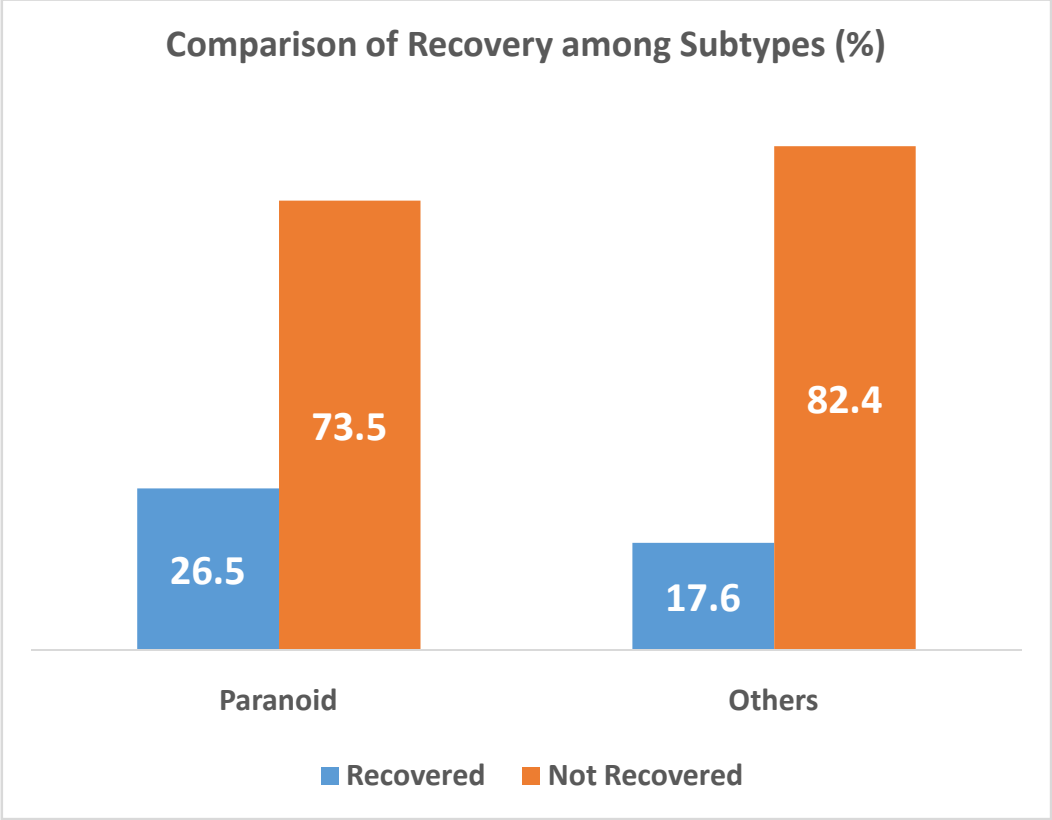

Table 10 and Figure 10 show the comparison of rate of recovery among the subtypes of schizophrenia. It was found that paranoid subtype showed higher rates of recovery (26.5%). However, this difference was not statistically significant (p=0.55).

Table 11.Comparison of Rates of Recovery in patients with and without Family history of schizophrenia.

Family history	Recovered	Not recovered	n	p Value
Yes	1 (8.3%)	11 (91.6%)	12	0.28
No	24 (27.2%)	64 (72.7%)	88	
Total	25	75	100	

Figure 11.Comparison of Rates of Recovery in patients with and without Family history of schizophrenia.

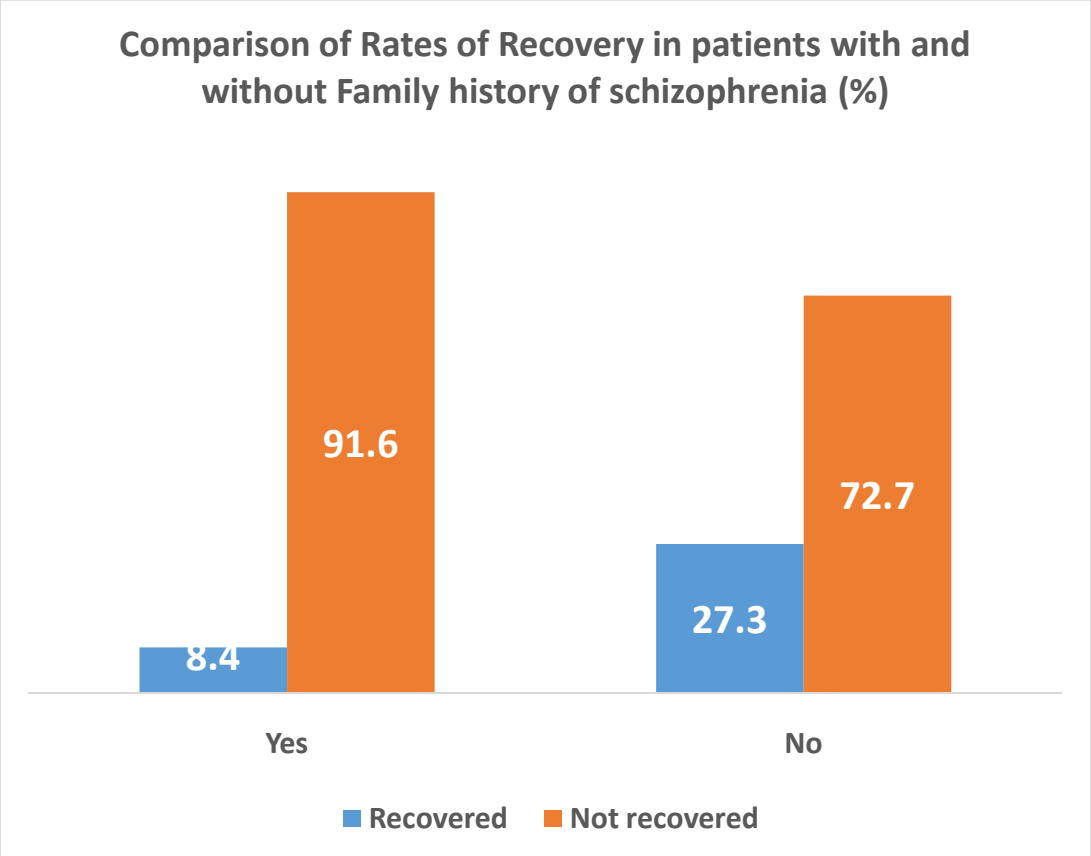

Table 11 and Figure 11 show the comparison of recovery rates among patients with and those without family history of schizophrenia. Patients with no family history of schizophrenia were found to show higher rates of recovery(27.3%). This difference, however, had no statistical significance (p=0.28).

Table 12. Comparison of Rates of Recovery in patients treated with Typical antipsychotics vs those treated with Atypical antipsychotics.

Antipsychotic	Recovered	Not recovered	n	p Value
Typicals	5 (26.3%)	14 (73.7%)	19	1.00
Atypicals	20 (24.7%)	61 (75.3%)	81	
Total	25	75	100	

Figure 12. Comparison of Rates of Recovery in patients treated with Typical antipsychotics vs those treated with Atypical antipsychotics.

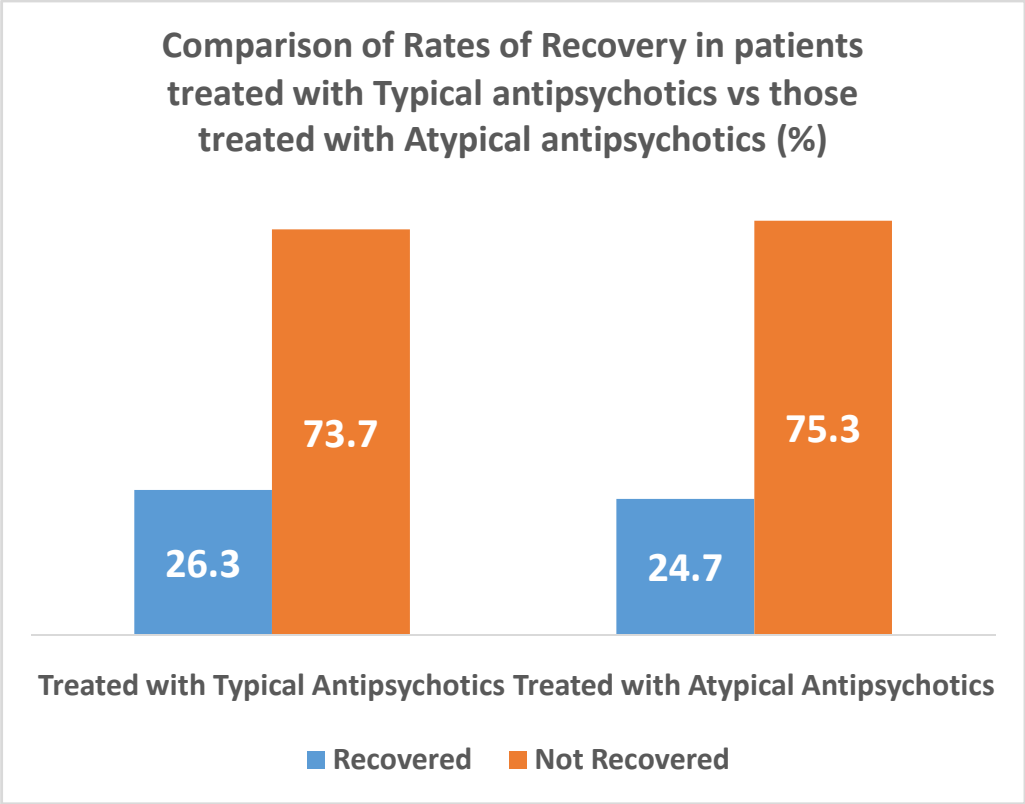

Table 12 and Figure 12 show the comparison of rates of Recovery in patients on Typical antipsychotics vs those on Atypical antipsychotics. 26.3% of patients receiving typical antipsychotics showed recovery, whereas 24.7% of patients receiving atypical antipsychotics showed recovery.

Table 13. Comparison of Rate of Recovery in patients receiving Clozapine with those receiving Other antipsychotics

Antipsychotic	Recovered	Not recovered	n	p Value
Clozapine	4 (66.7%)	2 (33.3%)	6	**0.03***
Others	21 (22.3%)	73 (77.7%)	94	
Total	25	75	100	

Figure 13. Comparison of Rate of Recovery in patients receiving Clozapine with those receiving Other antipsychotics

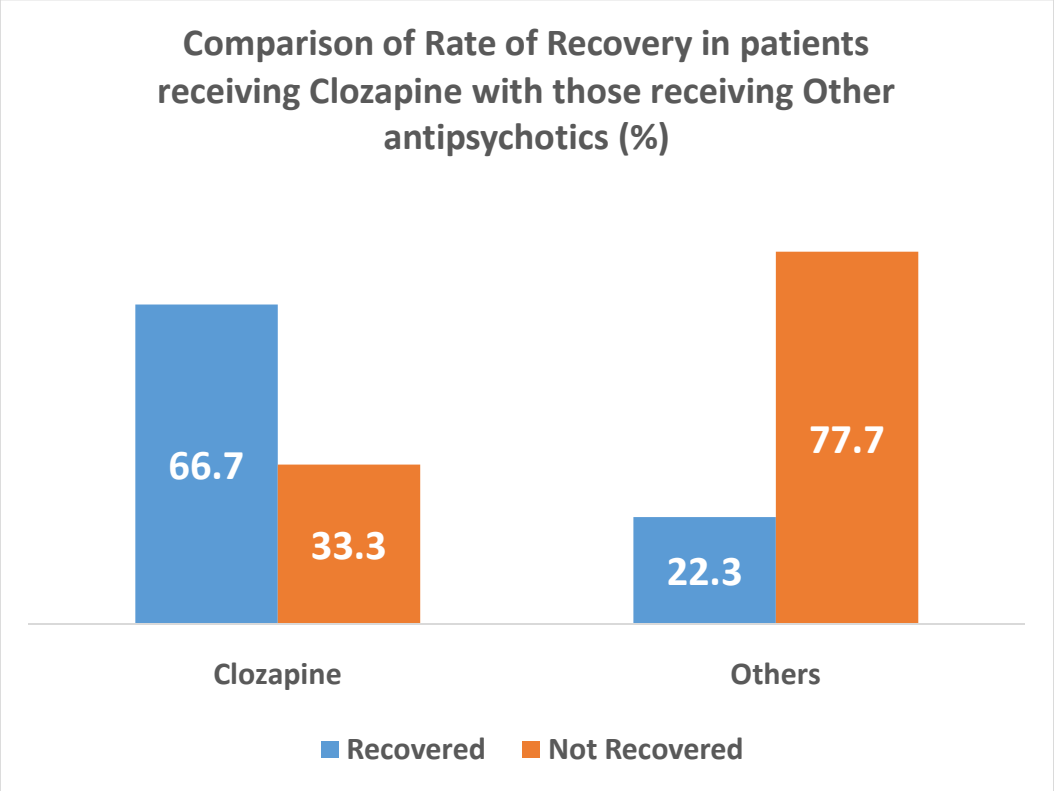

Table 13 and Figure 13 show the comparison of recovery rates among patients on clozapine and those on other antipsychotics. A statistically significant difference was found (p=0.03) indicating that clozapine had higher rates of recovery compared to other antipsychotics (66.7%).

Table 14. Comparison of Rates of Recovery with Durations of Illness

Duration	Recovered	Not recovered	n	p Value
<1yr	2 (40%)	3 (60%)	5	0.60
2-5yrs	11 (29.7%)	26 (70.3%)	37	
6-10yrs	8 (22.8%)	27 (77.2%)	35	
>10yrs	4 (17.4%)	19 (82.6%)	23	
Total	25	75	100	

Figure 14. Comparison of Rates of Recovery with Durations of Illness

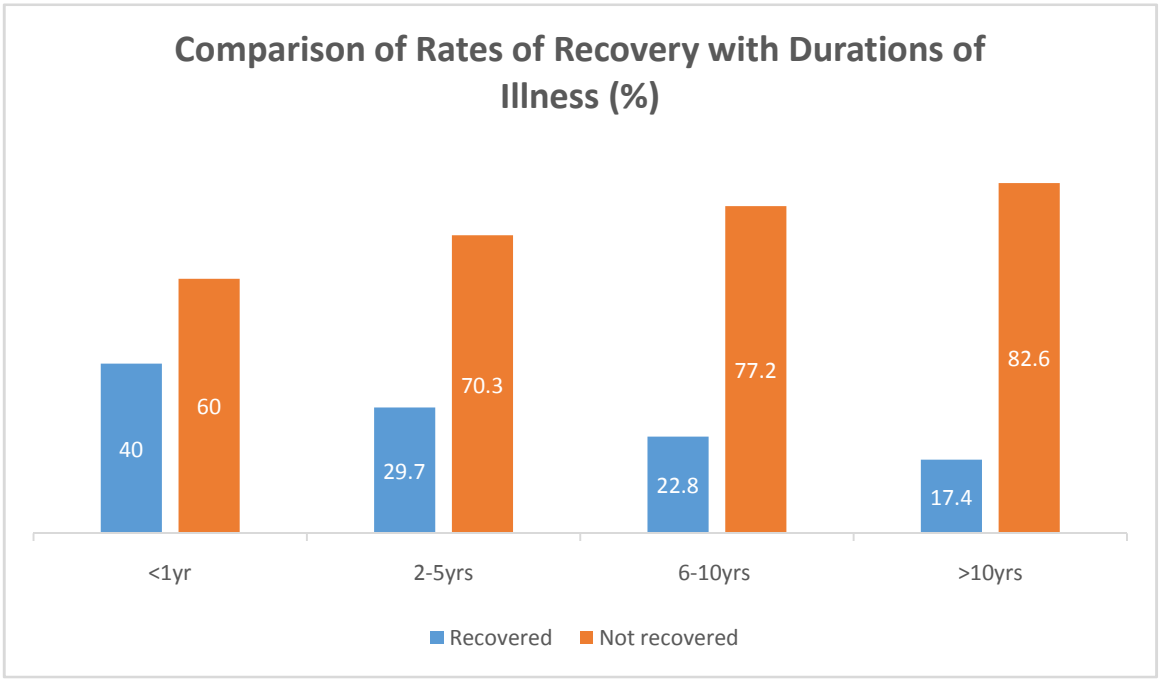

Table 14 and Figure 14 show the comparison of recovery rates with Durations of illness. It was found that recovery rate was seen at 40% for patients with duration of illness <1 year, 29.7% for 2-5 years, 22.8% for 6-10 years and 17.4% for duration >10 years.

Table 15. Association of rate of Recovery with Age of Onset of Illness

Age of onset	Recovered	Not recovered	N	p Value
<13yrs	0 (0.0%)	1 (100.0%)	1	0.84
13-45yrs	23 (25.0%)	68 (75.0%)	91	
>45yrs	2 (14.3%)	6 (85.7%)	8	
Total	25	75	100	

Figure 15. Association of rate of Recovery with Age of Onset of Illness

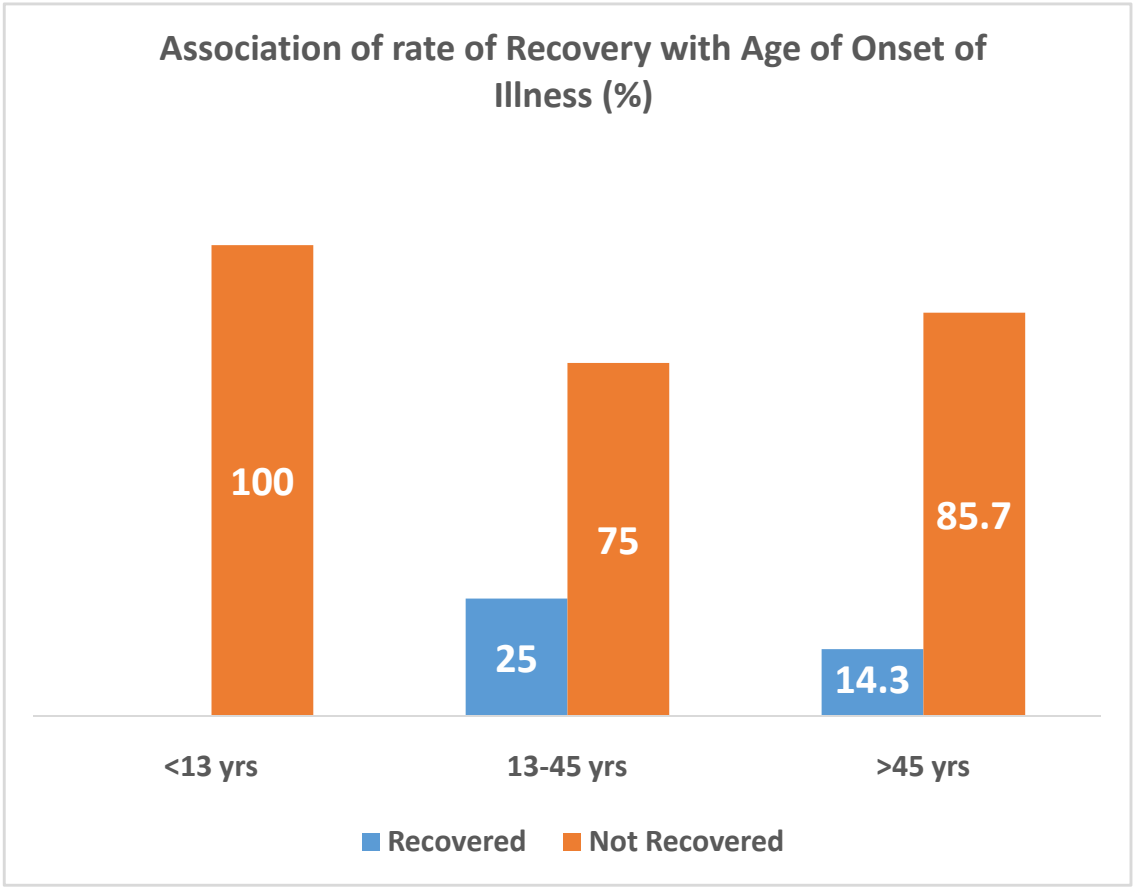

Table 15 and Figure 15 show the association of recovery with the age of onset of illness. It was found that 0% of patients with age of onset of illness <13 years showed recovery, whereas 25% with age of onset of illness between 13-45 years and 14.3% with age of onset of illness >45 years showed recovery.

Table 16.proportion of recovered patients experiencing Unfair Treatment according to Number of Areas of life

Number of Areas of life	Percentage of recovered patients facing Unfair treatment
1-5	48%
6-10	40%
>10	12%

Figure 16.Percentage of recovered patients experiencing Unfair Treatment according to Number of Areas of life

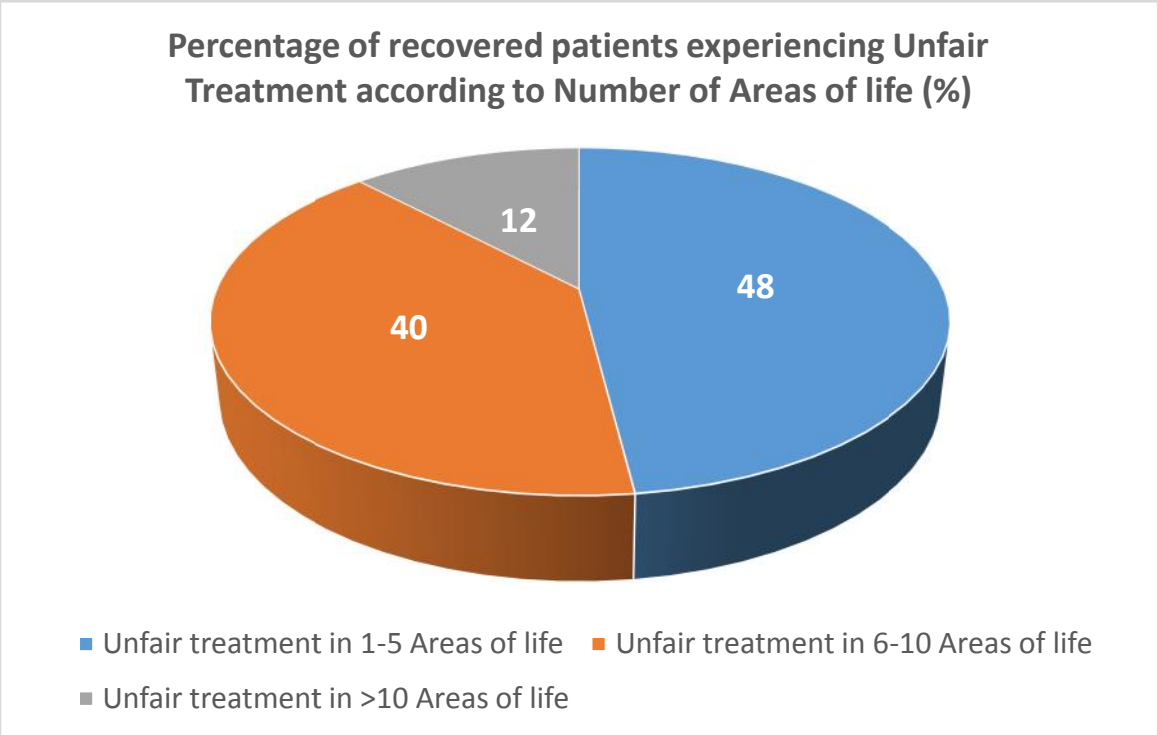

Table 16 and Figure 16 represents the percentage of recovered patients experiencing Unfair Treatment according to Number of Areas of life. 100% of the recovered patients reported having faced unfair treatment in at least 1 area of life. Of these, 48% faced unfair treatment in 1-5 areas of life, 40% in 6-10 areas of life, and 12% in more than 10 areas of life.

Table 17. Proportion of recovered patients experiencing Unfair Treatment in specific areas of life

Specific Area of Unfair Treatment	Patients facing discrimination (%)
By neighbourhood	96
Concealing their illness	93.75
Special treatment by family	81.25
Marriage	76.47
Avoided by people	76
Social life	72
Role as a parent	68.75
In intimate relationships	56.25
Finding a job	54.54
During pregnancy	53.84
Making or keeping friends	52
Religious practices	52
Levels of privacy	48
Keeping a job	33.34
Education	33.34
Verbal/physical abuse	32
By family members	24
Disability benefits	16.67

Figure 17. Proportion of recovered patients facing discrimination in specific areas of life

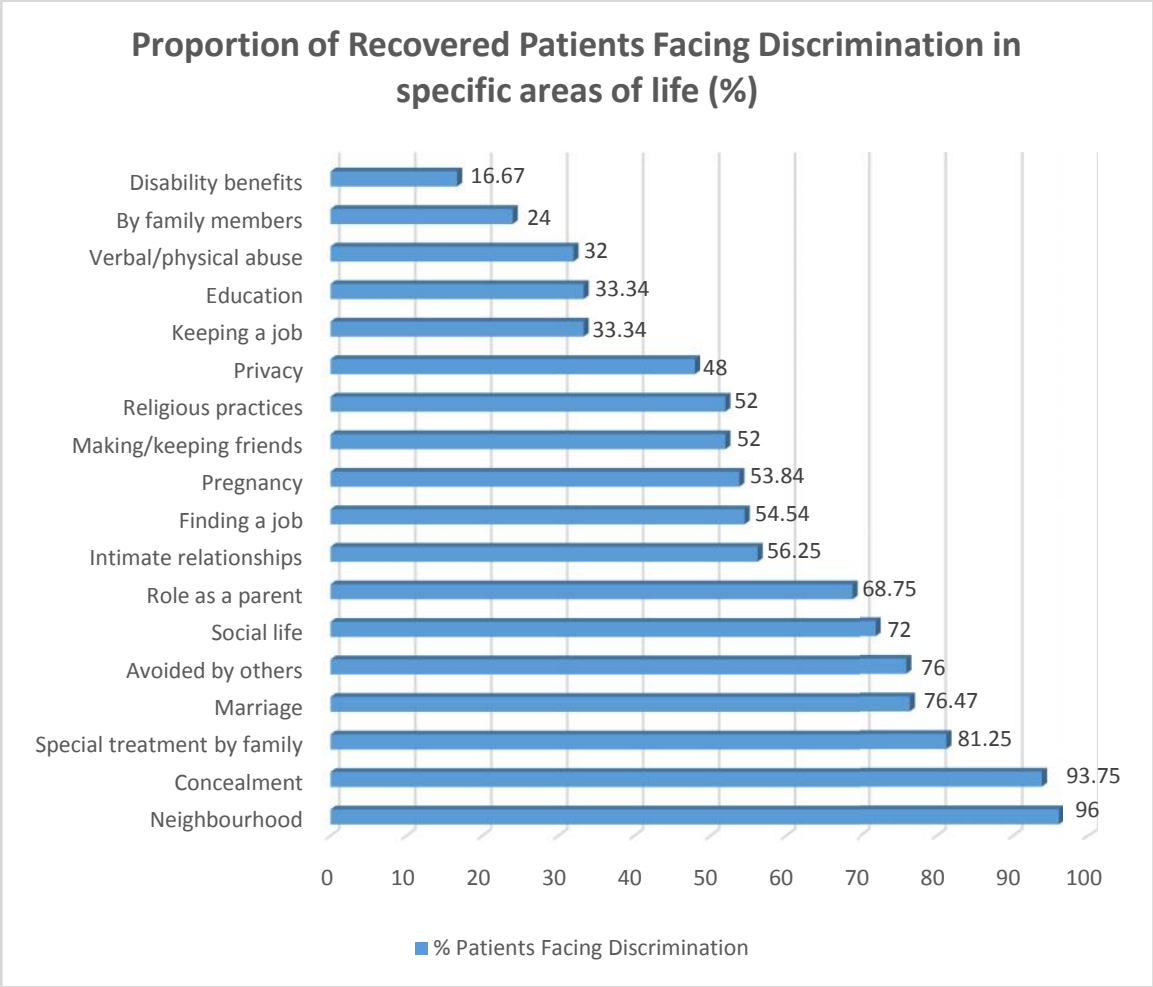

Table 17 and Figure 17 represents the percentage of recovered patients facing discrimination in specific areas of life. We found that the highest discrimination faced by the recovered patients was in the neighbourhood (96%), avoidance by others (76%) and in area of marriage (76.47%). High rates of recovered patients engaged in concealment (93.75%) and reported being treated specially by the family (81.25%).

DISCUSSION

The study was done in a general hospital tertiary care setup in South India and patients were sampled from the Psychiatry OPD. The primary aim of the study was to determine the prevalence of recovery in patients with schizophrenia. In the quest to declare recovery, it was important to assess for point symptomatic remission, complete remission and functional remission.

Point symptomatic remission

Point symptomatic remission was defined by score of no more than 3 in all the items of the 18-item Brief Rating Scale. It was found that 42% of the patients met criteria for the same. This finding is comparable to the study done in Czech republic by Prikryl (2011), which reported a point symptomatic remission of 54% using similar criteria [50]. Most other studies have assessed complete symptomatic remission. Though it may be assumed that the symptom remitted patients qualify to be called as point symptomatically remitted too, the other studies have not explicitly presented their results in this form.

Complete Remission

Complete remission was defined, based on the definition given by Nancy Andreasen[32], as the maintenance of the asymptomatic state for a period of at least 6 months. When the criteria were applied to our study group, 31% of patients were found to fulfil the criteria (Table 2, Fig 2). This finding is well within the range of numbers reported by various other studies. In the study done by Harrow et al. (2005), remission was achieved in 10% of the patients at the end of 2 years, and 19% or more at subsequent follow up visits. A study done in Canada with a population of

predominantly schizophrenics, a remission rate of 22% by the end of 6 months and 35% at the end of 1 year was found [47]. Another study reports a symptomatic remission rate of 33% when using criteria of CGI-SCH score of <4 for at least a period of 24 months [9]. Wunderink et al. (2008) reported symptomatic remission rate of 52% in a population of patients of first episode psychosis [33]. More recently, a study using tools and criteria similar to ours, yielded 45% remission rate in patients with schizophrenia [50]. Hence, our study resulted in findings that agree with many other similar studies, depending upon the duration criteria used.

Functional remission

We found a functional remission rate of 41% in our study population (Table 3, Fig 3). Functional remission has been measured by various other studies over the years, with variable results. The SOHO study conducted in Europe reports of a functional remission rate of 13% [9]. Another study by Robinson et al. (2004) showed that 25.5% of their subjects had achieved functional remission when rated on the Groningen Social Disabilities Schedule (GSDS) [33]. Similarly, another study reports functional remission rates of 26% when rated on the PSP scale which is employed in our study too[50]. Functional remission criteria used in our study is a score of 71-100 on the Personal and Social Performance scale (PSP) for a minimum duration of 6 months. The functional remission rate yielded by our study is higher than those noted by the above-mentioned studies. But in 2010, it has been noted in a study by Iyer et al. that the functioning status of patients in India is better than those in Canada [141]. This was attributed to the better family support system available in our country. These factors also been acknowledged in an article by Srinivasanin 2002 [142]. In addition to that, considering the joint family system that is prevalent in the Indian population, the

financial burden gets distributed among the other functioning members of the family. This reduces the expectations from the afflicted and reflects in the caregivers' report of adequate functioning in the patient. Higher functional remission rates in our study could also be because of the shorter duration criteria used, when compared to the other studies that assessed for up to 2-3 years. A longer duration of follow up to assess sustenance of remission is desirable.

Recovery

Recovery was conceptualized as the simultaneous achievement of complete symptomatic remission and functional remission criteria. From the data collected from our sample population, it was found that 25% of the patients fulfilled the criteria for recovery from schizophrenia (Table 4, Fig 4). Studies measuring the occurrence of recovery in schizophrenia have come out with values ranging from 4% to about 50%. In the SOHO study the recovery noted was 4%, which compared to most other studies is on the lower side. This has been attributed by the authors to the fact that the duration criteria for recovery used, i.e. the maintenance of recovery for a duration of up to 36 months, is more stringent than most other studies[9]. Robinson et al. (2004) studied a sample size of 118 subjects using criteria similar to ours and the study yielded a recovery rate of 13.7%[48]. A study conducted in Norway used remission criteria given by Andreasen et al. (2005) and the recovery criteria given by Lieberman et al. (2002), which is similar to that employed in our study. Based on those definitions, the investigators found 16% of the subjects showing recovery[143]. In the study by Harrow et al.(2005), recovery was noted in 10% of schizophrenics at the end of 2 years and over 19% on subsequent visits[13]. A study conducted in Czech Republic by Prikryl et al. in 2013 used a near identical set of criteria, and it reports of a

recovery rate of 19%. Another study by a European Research team in Norway reported recovery rate of about 50%.[49]

This broad range of recovery values reported by various studies is due to the differences between the criteria used to define recovery. When variable criteria give such variable results, it is difficult to say with conviction whether the prognosis of schizophrenia is or isn't as bleak as it is thought to be. Hence, there is a need for a universally accepted criterion for recovery in schizophrenia in order to generate uniform and comparable results. However, our study detected a recovery rate of 25%, which lies well within the range of previously reported values, and is similar to the results obtained by studies using criteria similar to ours.

Recovery attributes

Marital status

In our study, higher rates of recovery were noted in married patients when compared to those unmarried, i.e. 37.0% against 14.8% (Table 7, Fig 6). This finding was found to be statistically significant with a p value of 0.0194. Hence, our findings corroborate with married status being a good prognostic predictor, identified by other studies.

In the past, it's been found that the marital status has a significant impact associated with mental illnesses [83]. A study even showed marriage to be associated with delay in onset of psychotic symptoms in schizophrenia by up to 2 years [59]. Better level of care and support by the spouse available for the mentally ill obviously leads to better outcomes [84]. Married status has been identified to hold good prognostic indicator for schizophrenia [144]. It may so happen in the Indian population that the

individual may be married but has not been living with the spouse owing to the illness of other reasons. Therefore, to collect data in a more sensible way, the "Unmarried" group in our study included those who never married, those who were widowed or those who had separated/divorced and hence, did not live with the spouse during the past one year. When comparing the attributes of the 25 patients showing recovery, our study yielded a statistically significance associated with the marital status.

Gender

Our study showed a slightly higher rate of recovery in females when compared to that in males, 28.9% in females against 21.8% in males (Table 5, Fig 4). However, this difference was found to be not statistically significant with a p value of 0.4982. In a review article, Sathishkumar et al. (2014) identified the female gender being one of the good prognostic factors [61]. While a systematic review of recovery rates related to gender reports no difference in outcomes based on the sex [53], some studies suggest a better prognosis associated with the female gender stating more severe symptomatology and poorer functioning in males [63,64].

Subtype of schizophrenia

Many studies have examined the relationship between the subtype of schizophrenia and their outcomes. Most report paranoid schizophrenia to have a better outcome or recovery when compared to hebephrenic or undifferentiated schizophrenia [85–87]. In our study too, we found paranoid schizophrenic to have higher proportion of recovery among them (26.5%) when compared to non-paranoid subtypes (Table 10, Fig 9). However, the finding showed no statistical significance with the p value being 0.5505. It may also be noted that the paranoid subtype represented a major bulk of the

sample population with 83%, while the non-paranoid subtypes formed 17% of the sample. This may render the sample population incomparable. More representative samples could have yielded us a statistically significant value.

Family history

Family history of psychosis having implications on the prognosis of the illness has been well documented in studies in the past. Positive family history is noted to be associated with the severity of negative symptoms [71–73], more severe course [74–76] and poorer response to treatment [71,77], overall leading to worse outcomes. Our findings show that patients with no family history of schizophrenia showed higher rates of recovery (27.3%) when compared to those that had positive family history of mental illnesses (8.3%) (Table 11, Fig 10). This finding agrees with the numerous above-mentioned studies that have linked a positive family history to worse prognosis. However, our finding was found to not be statistically significant, with a p value of 0.2851. Studies with larger sample sizes are needed to examine this association reliably.

Domicile

Our study consisted of a predominantly rural population amounting to 88% of the sample population. We found that recovery was achieved in 28.6% of the rural population when compared to 18.9% of the urban dwellers (Table 8, Fig 7). This compliments previous studies that showed higher prevalence of the illness in urban areas [78–80]. Considering the social context of rural India, its known that it predominantly consists of joint family systems wherein members of the extended family reside, earn and live under the same roof. This provides the afflicted with

ample moral support. It is also possible for the rest of the family members to act as a cushion to absorb the shortcoming of the individual and may help in the recovery process by cutting down the day to day stress faced by the patient. This role of family members has been highlighted by the International Pilot Study of Schizophrenia [81]. Higher rates of recovery in rural populations may be occurring due to this.

Antipsychotic medications

When comparing the medications that patients were maintaining on, it was found that 26.3% of patients on FGAs had recovered, whereas 24.7% of patients on SGAs had recovered (Table 12, Fig 11). Hence, no significant difference was noted between the recovery rates of patients on first generation of antipsychotics and those on second generation of antipsychotics. This finding is consistent with the well accepted results of the CATIE study of 2005 which found atypical antipsychotics to have similar efficacy when compared to typicals[95].

Comparing recovery with clozapine with other antipsychotics yielded a statistically significant difference (p value=0.0329), with 66.7% of patients on clozapine showing recovery compared to the 22.3% of patients on other antipsychotics (Table 13, Fig 12). This agrees with the findings of the phase 2B of CATIE study that detected a significantly better efficacy in switching to clozapine than to one of the other antipsychotics used in the study [96]. But it must be noted that the number of patients who were on clozapine in our sample was just 6, out of whom 4 had shown recovery. Hence, our result, though statistically significant, needs to be taken with a pinch of salt. There is a need for a larger sample population.

Duration of illness

Numerous studies report of duration of illness being associated with the prognosis. According to a study from 2012, longer duration of illness is found to have poor prognosis. This was explained to be predictive of poor treatment response, indicating adverse outcomes [68]. Our study showed that among the recovered patients, higher rate of recovery was found in patients with shorter duration of illness. 31% of recovered patients had <5 years of schizophrenia, and this proportion showed a decreasing trend as the duration increased, i.e. 25.8% recovered patients in 6-10 years duration range, and 14.8% in those with more than 10 years of illness (Table 14, Fig 13). This result, however, was found to be not statistically significant (p value=0.6069).

Age of onset

We compared the association of recovery with the age of onset of the illness. We found that a higher proportion of patients in the age group of 13 to 45 years showed recovery (25%) when compared to those under 13 years or over 45 years of age (0% and 14.3% respectively) (Table 15, Fig 14). The findings were not statistically significant (p value 0.8449). Many studies recognize later onset of schizophrenia to have better outcomes [58–60]. The Comprehensive Textbook of Psychiatry mentions more negative symptoms to occur in patients with early onset of illness, hence carrying a poorer prognosis [56]. However, with our results, it cannot be commented as to whether the age of onset of schizophrenia has any association with the outcomes. This is in part due to the fact that the sample sizes in each of the age groups are not comparable and hence, leave room for over- or under-estimation of actual values.

Stigma

Patients of schizophrenia have been noted to face stigmatization and the consequent discrimination in various studies. It may lead to undesirable outcomes like unemployment, isolation, shame, low self-esteem, etc[110,111]. The secondary objective of our study was to assess the stigma perceived by the patients who recovered from schizophrenia.

In our study, 100% of recovered patients reported having faced unfair treatment in at least one area of life (Table 16, Figure 15). Of these, 48% faced unfair treatment in 1-5 areas of life, 40% in 6-10 areas of life and 12% in more than 10 areas of life. An Indian study by Koschorke et al. found that 42% of patients faced unfair treatment in at least one area of life, of which 20% suffered in only 1 area of life, 11% in 2-3 areas and 10% in more than 4 areas [119]. Our results are much higher compared to the above-mentioned study. It is to be noted that in our study, DISC-12 questionnaire was applied to only the patients showing recovery, whereas in the study by Koschorke et al. the questionnaire was applied to all schizophrenia patients with symptom severity of "moderate" on the Clinical Global Impression-Schizophrenia (CGI-SCH). It may be possible that symptomatic patients' psychopathology may not allow them to take note of some forms of discrimination they are subjected to by people around them. Moreover, the exposure to situations that generate stigmatizing reactions begins once the individual has recovered and is actively attempting to reintegrate into the society. Hence, we are of the opinion that our findings more valid since the reliability of reporting is greater when obtained from fully asymptomatic individuals, when compared to that from patients with active psychotic symptoms.

Discrimination and Unfair Treatment in Specific Areas of life (Table 17, Fig 17)

When examining the proportion of patients facing stigma and discrimination in specific areas of life, we found that 96% faced discrimination in the neighbourhood. This is also evident from the finding in a qualitative study that recorded patients describing being "treated differently or with lack of respect" and "teasing or negative comments" from people in the vicinity [119]. Discriminatory experiences in the neighbourhood have been reported to be 37% in a study by Thara and Srinivasan in the year 2000 [108].

It is common to see that family members in India are very much integrated with each other. Help in various areas of life becomes easily available in such contexts. The family members may ask the patient to only rest while they take care of work or household matters. While their intentions are good, they are unaware of the impact the patient may feel. This "special" treatment and overprotectiveness of the family members can lead to deterioration in the patient's self-esteem and generate feelings of worthlessness. Even being treated specially is itself a form of discrimination. In our study, 81.25% reported special treatment by family members that may represent overinvolvement. Another form of excessive indulgence maybe the lack of privacy afforded to the patient. Family members may consider the patient to not be completely capable of making decision for self and may indulge in taking calls for them. This may lead to significant encroachment into their levels of privacy. This was evident in our results where 48% of the patients reported their privacy being violated by people around them. While it's true that developing countries have better prognosis in schizophrenia owing to the family support system [81], the lack of awareness regarding how certain actions might affect the patient facilitates

overinvolvement. It is hence always advisable for the clinician to detect and address these issues as and when possible. Efforts must be made to ask for these particular aspects since its unlikely that the patient or caregivers would report such matters spontaneously.

76.47% faced difficulties in getting married, and this is a finding that is in line with that of studies that identified marriage, pregnancy and unemployment predominating the discriminatory experience [108,129]. An Indian study has shown marriage to be one of the popular concerns for the patient and the family. The study noted that disclosure is avoided and also that some patients had been instructed by family members to not reveal his/her illness to anyone [119].

76% of patients in our study felt they were being avoided by people, and this has been identified to be 14% in a study by Koschorke et al. in 2014, and documented by Loganathan and Murthy in a qualitative study in 2008[119,130]. It may be purported that this adaptive behaviour may be due to the internalization of stigma and acceptance of the prejudiced status, which furthers the feelings of guilt and shame, in addition to the obvious intention to avoid anticipated unfair treatment and ridicule. These subjective perceptions have been documented by a few other studies as well [112,113,119].

An important finding was that 93.75% admitted having tried to conceal their illness from others. It is a well-established fact that the patients facing stigma often tend to conceal their stigmatizing attributes in an attempt to avoid facing discrimination. But this may be at the cost of feeling of hopelessness, shame, guilt, internal distress, etc[116–118]. An Indian study has documented disclosure being of special concern in the setting of marriage. The study also noted that some patients had

been instructed by family members to not reveal his/her illness to anyone [119]. Another Indian study by Thara and Srinivasan in 2000 documented the necessity of secrecy felt by the patient, and the worry about others discovering the affliction [108]. Our result showed a high proportion of patients resorting to concealment of their illness. This highlights the possible extent to which they suffer distress within their minds due to this behavioural adaptation of theirs.

The impact of stigma in the area of employment has been highlighted in many studies in the past. Stigmatized patients are known to refrain from grabbing opportunities that they come across in life [109,113,119]. Hence, employment has been identified to be one of the areas with ample suffering [122,129]. In our sample, 54.54% had difficulty in finding a job while 33.34% had difficulty keeping a job. These numbers signify the adversities being faced by the patients in their quest to earn a living, despite having attained recovery status and subsequent absence of stigmatizing behaviours. Stigmatizing behaviours have been found to be one of the primary reasons for stigma and discrimination in the west. Reasons for stigma in the Indian context include inappropriate sexuality, disorganized behaviours, lack of social approval and the overall suspicious outlook of the individual [120]. This can have an adverse effect on the ability of the person to get and keep a job, as evident from the results of our study.

Discriminatory attitudes have been noted to occur in relation to pregnancy [129] and we found corroborating evidence that 53.84% faced stigma during or with respect to pregnancy. These experiences can include not being allowed to get pregnant or being subjected to abortions against their will. Considering the system of marriage in India wherein bearing children is seen as one of the important factors for social status

and even durability of the marriage, the diagnosis of the illness and the subsequent absence of "permission" to have children can have a detrimental effect on the chances of recovery in the patient. It is to be noted that not having any offspring itself carries its own stigma in the Indian society. It's been recognized that the family members are apprehensive about the patient getting pregnant due to the fear of children also suffering from the illness. While the genetic association of schizophrenia is a fact, it must be noted that the understanding and beliefs of the layperson may be exaggerated, causing them to resort to such adverse measures.

The difficulties faced by the afflicted do not end after successful creation of the progeny. Our study detected 68.75% of patients having faced discrimination in their role as a parent. This may manifest in the form of the person being assumed to be incapable of raising a child in the right manner. Owing to the lack of awareness of mental illnesses in our country, it is frequently believed that mental illnesses are caused due to an individual's inability to "deal with things". In an Indian study to assess the beliefs regarding the causality of schizophrenia, it was found that 55% of people believed schizophrenia is caused due to psychosocial stress and 22% blamed personality defect in the individual [145]. It is to be noted that both these causes point towards the patient's internal inefficiency at handling himself/herself and social stressors. This might further fuel the assumption of them being incapable of raising children as they themselves have been unsuccessful in the society in the first place. This may have a significant impact on the lives of the afflicted and probably also their offspring. It is imperative that efforts must be made to dispel the misconceptions surrounding the causative factors as part of the greater effort of curtailing stigma.

We found that 52% of the patients had difficulty making or keeping friends. This could be happening due to two reasons, both of which are involved with reduced interpersonal contacts. Firstly, the patient is shunned away and avoided by his/her contacts owing to the stigmatizing behaviour during symptomatic phases. This was evident in a study that reports of people in the patients neighbourhood reacting adversely to his/her afflicted label [119,130]. Secondly, the patients themselves may have accepted their illness label causing them to house feelings of shame, guilt and low esteem [112,113]. Hence, they may feel compelled to believe in their unworthiness to participate in the society. By these two possible means, it is possible that the frequency and quality of interactions between the patients and their close contacts suffers a gradual degradation over time, leading to them being unable to hold on to their friends from the past or make new ones.

Being a land of multiple cultures and religions, it can be expected that religious practices may play a role in those with mental illnesses. According to our results, 52% of the recovered patients had experienced discrimination in religious practices. We hypothesize that the explanation for this could be a form of overinvolvement. It may occur in the form subjecting the individual to special rituals and practices with an intention to seek blessings for his/her recovery from the illness. These practices may further reinforce the stigmatizing label that is attached to the individual and fuel discrimination among family members and in the neighbourhood. But this aspect needs to be further examined and explored to detect the various themes that may emerge.

Strengths of our study

1. To the best of our knowledge, not many studies have been conducted in India that apply the recovery criteria used in our study.
2. Tools used across the world with good validity and reliability have been made use of in our study.
3. Attempts to establish associations between recovery and various patient attributes have been made.
4. Our study specifically assessed perceived stigma in recovered patients. Since they house no active psychopathology, their reporting of experiences may have more credibility.
5. Our results reflect the stigma felt by patients even after having recovered.

Limitations

1. The sample size of our study could have been larger to pour more validity into the results generated.
2. A prospective study with longer duration may have yielded more reliable results.
3. A better design with attempts to examine the stability of recovery state instead of a single cross-sectional measurement may have been more useful.
4. A qualitative aspect could have been added to the study to better examine the stigma related burden.
5. This study represents findings from a small part of an otherwise diverse country like ours.

CONCLUSION

Recovery in schizophrenia in the Indian population was found in our study to be occurring in about a quarter of the sample population. Nearly half of the patients attain asymptomatic state at some point of time and almost a third maintain this state for 6 months or more. A little less than half of the patients were found to have adequate socio-occupational functioning. Recovery was noted to occur with higher frequency among married individuals and those who were being treated with Clozapine. Recovery, being widely identified and acknowledged in research, should now be aimed at from the management point of view, instead of focussing on attaining mere remission of symptoms.

Almost half the recovered patients reported experiencing discrimination in some or the other form. Nearly all the recovered patients interviewed reported facing discrimination in the neighbourhood and engaging in attempts to concealing their illness. High proportions also reported being stigmatized and discriminated in marriage, role as a parent, finding a job, making/keeping friends and in pregnancy. With evidence showing that stigma itself can hamper the recovery process, it is important to take measures to curtail stigma and discrimination to promote better outcomes.

SUMMARY

- This study was conducted in a tertiary care hospital, KLES Dr Prabhakar Kore Charitable Hospital, Belagavi. A hundred patients of schizophrenia participated in the study and were assessed for point-symptomatic remission, complete remission, functional remission and recovery. Attempts were further made to assess the perceived stigma and discrimination faced by the recovered patients.
- 42% showed point symptomatic remission, 31% showed complete remission, 41% showed functional remission and recovery status was attained in 25% of the study sample. Significant correlation was detected to indicate marriage to be a good prognostic factor. Use of clozapine was found to be associated with higher rate of recovery.
- Nearly half of the recovered patients reported facing unfair treatment or avoidance behaviour in one way or another. High proportions of patients were found to be discriminated in their neighbourhood, in matters related to marriage and pregnancy, employment, social life and their role as a parent. A great majority of patients also reported resorting to avoidance behaviours.
- The relatively good proportions of patients showing recovery proves its possibility and aids in rethinking of the otherwise popular belief of schizophrenia having a morbid prognosis.
- Efforts must be made in devising management strategies aiming for the recovery state and not mere remission of symptoms.

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ANNEXURE I

INFORMED CONSENT

"ASSESSMENT OF RECOVERY IN PATIENTS WITH SCHIZOPHRENIA: A 1 YR CROSS-SECTIONAL HOSPITAL-BASED STUDY"

Principal Investigator (PI): Dr. _____

Objective/Purpose of the study: You/your relative are/is being requested to be a subject in a cross-sectional study, the purpose of which is to study recovery aspects in schizophrenia in Belagavi city conducted between 1st January 2018 and 31st December 2018, by Dr. _____, a post-graduate student in the Department of Psychiatry at Jawaharlal Nehru Medical College, KLE University, Belgaum, Karnataka.

You/your relative have/has been requested to participate in this study as you/your relative are/is suffering from a psychiatric illness which needs intervention. Therefore, the above study helps provide better quality of care for effective integration of the patients back into the society.

Procedure involved: If you/your relative agree to be a part of the study, the PI will interview you/your relative. The PI will interview you/your relative and take the details according to predesigned proforma.

Risks and benefits involved: There are no risks involved. During the period of study, the existence or development of any significant findings in terms of psychiatric disorders will be informed by the PI to you/your relative as well as the parent consultant for the appropriate action.

Alternatives: Your/your relative's participation in this study is a completely voluntary decision. If you/your relative do/does not want to be a part of the study,

you/your relative may refuse for the same or if you/your relative are/is already a part of the study and if you/your relative want/wants to withdraw from the study for any reason, you/your relative may do so without any hesitation. Discontinuation from the study for any reason will not affect your/your relative's current or future relationship with KLES Dr. Prabhakar Kore Hospital, Belgaum.

Privacy and confidentiality: The information provided by you/your relative will be known to the PI and the members of the research team. This information will remain confidential and will be disclosed to others only with your/your relative's written permission or if required by the law.

Financial incentives for participation: You/your relative will not be paid/offered any gifts for participation in the research. There will not be any remuneration for participating in the research and you/your relative will not be reimbursed for any expenses, such as bus/train travelling /companion/assistant etc.

Authorization to publish results: When the results of the research are to be published or discussed in conferences by the PI, no information will be disclosed that will reveal your/your relative's identity.

संमतीपत्र

"असेसमेटऑफारेकव्रीइनपेशट्सावेथस्चीझोफ्रेनेया :अवनइयरक्रॉस - सेक्शनलहॉस्पिटलबेस्डस्टडी"

मुख्यसशोधक :डॉ. _____

अध्ययनकाउद्देश्य: डॉ _____, पदव्युत्तरस्नातक, मानसशास्त्रावेभाग, जे.एन.एम.सी., के.एल.ई. ाविश्वावेद्यालय, बेलगावी, केद्वारा 1 जनवरी, 2018 से 31 ादिसबर, 2018

तककेदौरानास्किज़ोफ्रेनेयामेहोनेवालेसुधारोपरअध्ययनाकेयाजारहाहै।आप/आपकेारेश्तेदारको यहरोगहोनेकेकारण,

इसप्राक्रेयामेआप/आपकेारेश्तेदारकोशाामेलकरनेकेालेएअनुरोधकररहेहैं।इसअभ्याससेसमाज मेसभीास्किज़ोफ्रेनेयाकेरोगीकोबेहतरउपचारप्रदानकरनेमेसहायताहोगी।

कार्यपद्धती: यादिआप/आपकेारेश्तेदारअध्ययनकाहिस्साबननेकेालेएसहमतहैं, तोमुख्यसशोधकआप/आपकेारेश्तेदारकाइटरव्यूकरेगे।

खतरेऔरउपयुक्तता: इसअध्ययनमेकोइखतरानहोहै| अध्ययनकोअवाधिकेदौरान, मनोरोगावेकारोकेसदभेमेंकेसीभीमहत्वपूणेनिष्कषेकाास्तित्वयावेकासआपकोमुख्यसशोध कद्वाराआपके/आपकेारेश्तेदारकेसाथ-साथउाचेतकारेवाइेकेालेएसूाचेताकेयाजाएगा।

विकल्प:

इसअध्ययनमेआपको/आपकेारेश्तेदारकोभागीदारीएकपूरीतरहसेस्वैाच्छिकाहैं।यादिआप/ आपकेारेश्तेदारअध्ययनकाहिस्सानहोबननाचाहतेहैं,

तोआप/आपकेारेश्तेदारकोइसकेालेएमनाकरसकतेहैयायादिआप/आपकेारेश्तेदारपहलेसेहीअध्य यनकाहिस्साहैऔरअगरआप/आपकेारेश्तेदार/किसीभीकारणसेअध्ययनसेपीछेहटनाचाहताहै, तोआप/आपकेारेश्तेदारबेनाकिसीझिझककेऐसाकरसकतेहैं।किसीभीकारणसेअध्ययनसेपीछेह

टनेसेडॉ।प्रभाकरकोरेहॉस्पिटल,

बेलगामसेआपके/अपकेरिश्तेदारकेवर्तमानयाभावीभविष्यकेसबधोकोप्रभावितनहोकरेगा।

गोपनीयता

:आप/आपकेरिश्तेदारद्वारादीगइेजानकारीमुख्यसशोधकऔरशोधसमूहकेसदस्योकोजानीजाए गी।यहजानकारीगोपनीयरहेगीऔरकेवलआपकी/आपकीरिश्तेदारकीलिखितअनुमतिकेसाथया कानूनद्वाराआवश्यकहोनेपरहीदूसरोकोअवगतकरायाजाएगा।

आर्थिकप्रोत्साहन:

आप/आपकेरिश्तेदारकोअनुसधानमेभागलेनेकेलिएकोइेउपहारनहीदियाजाएगा/पेशकशनहीकि याजाएगा।अनुसधानमेभागलेनेकेलिएकोइेपारिश्रमिकनहीहोगाऔरआप/आपकेरिश्तेदारकोकि सीभीखचेकेलिएप्रतिपूर्तिनहीहोगी, जैसेकिबस / ट्रेनयात्रा / साथी / सहायकआदि।

परिणामोंकोप्रकाशितकरनेकेलिएप्राधिकरण:

जबशोधकेपरिणामप्रमुखअन्वेषकद्वारासम्मेलनमेप्रकाशितयाचर्चाकेएजाएगे, तोकोइेजानकारीनहीदीजाएगीजोआपकी/आपकीरिश्तेदारकीपहचानप्रकटकरेगी।

संमतीपत्र

"असेसमेटऑफारेकव्रीइनपेशट्सांवेथस्चीझोफ्रेनेया :अवनइयरक्रॉस - सेक्शनलहॉस्पिटलबेस्डस्टडी"

मुख्यसशोधक :डॉ. _____

अभ्यासाचाहेतु :डॉ_____ पदव्युत्तरस्नातक, मानसशास्त्रांवेभाग, जे.एन.एम्.सी., के.एल.इ. ांविद्यापीठ, बेलगावीयाने१जनवरी, २०१८ते३१दिसबर, २०१८याकालावधीतांस्किजोफ्रेनेआमधेहोणारेसुधारणावरअभ्यासकरीतआहे.तुम्हाला/तुमच्या नातेवाइकानाहारोगअसणाऱ्याकारणासाठी,

हयाअभयासाततुम्हाला/तुमच्यानातेवाइकानासहभागीहोण्यासांवेनतीकरतआहोत.

हयाअभ्यासानेसमाजामधीलसवोंस्किज़ोफ्रेनेआचारोंगेनाचाग्लाउपचारदेण्यातसहाय्यहोइेल.

कार्यपद्धती

:ज़रतुम्हीइच्छुकअसालतरहयाअभ्यासाचेमुख्यासशोधकतुमच्या/तुमच्यानातेवैकचीतक्तानु सारमांहितीघेतील.

धोकेअणिउपयुक्तता :हयामधेकोणताहीधोकानही. अभ्यासाप्रसगीआधीचअथवानवीनबाबीआढळूनआल्यासआपणासमुख्यासशोधककलवतील. तसेचपुढीलउपचारासाठीआपणाससांगेतलेजाइेल.

पर्याय :आपली/आपल्यानातेवाइेकाचासहभागहापूणेतास्वताचा/स्वताचेअसेल. ज़रतुम्ही/तुमचेनातेवाइेकहयानासहभागनकोअसल्यासतेतसेकरूशांक्तेल. तसेचजेआधीचहयाउपक्रमाचेसदस्यअसतीत , तेहीकोणत्याहीकारणासाठीमाघारघेऊशकतात.

असलग्नताहयाकारणामुळेसदरउपक्रमातनआपले/आपलेनातेवाइकाचेसध्याचेअथवाभावेष्या तीलक.ल.इ.इस. डॉप्रभाकरकोरेहॉस्पेटल, बेलगावीसंमंधबाधीतहोणारनाहोत.

गोपनीयता

:आपण/आपलेनातेवाइकानीदिलेलीमाहितीफक्तमुख्यसशोधकवसशोधकाचेसचहयापुरतेचअ सेल. प्रस्तुतदिलेलीमाहितीकोणत्याहीकारणासाठीकोणासहीसमजनारनही. तसेचगोपनीयताराखण्यातयेइल.तसेचतुम्हीअथवानातेवेकाचीपूवेपरवानगीहीलेखेतरूपातव कायद्याअतगेतबाध्यअसल्यासपुरवण्यातयेइल.

आर्थिकप्रोत्साहन

:तुम्हाला/तुमच्यानातेवाइकानाप्रस्तुतअभ्यासक्रमअतगेतसहभागानेमेत्तकोणतेहीलाभमे ळणारनाहोत. तसेचकोणत्याहीप्रकारचेआर्थिकलाभजसे - प्रवासभत्ता, मदतनीस, वगैरेमेळणारनही.

निकालप्रकाशितकरण्यासअधिकृतता

:जेव्हाप्रस्तुतसशोधनाचेनेकालप्रकाशेतअथवाचचेसाठीसभेमधेमुख्यासशोधकाकडूनकरणेत येइलतेव्हातीमाहितीदिलीजाणारनही.

ಒಪ್ಪಿಗಪತ್ರ

"ಅಸಸ್ಮಂಟ್ಒಫ್ರಿಕವರಇನ್ಪಷಂಟ್ಸ್ವಥ್ಸ್ಕ್ಯೂಫ್ರಸಿಯಾ :ಏಬನ್ಇಯಿರ್ಕ್ಯಾಸ್ಸ್ಟಡಿನಲ್ಲಾಸ್ಟಿಟಲ್ಬೀಸ್ಡ್ಸ್ಟಡಿ"

ಮುಖ್ಯಸಂಶೋಧಕರು :ಡಾ. _____

ಉದ್ದೇಶ:ನೀವು / ನಿಮ್ಮಸಂಬಂಧಒಂದುಸಂಶೋಧನದಲ್ಲಿಭಾಗವಹಿಸಲುಏನಂತಿಸಲ್ಪಡುತ್ತದ. ಇದುಬಳಗಾಏನಗರದಲ್ಲಸ್ಕಿಜೋಫ್ರೀನಿಯಾದಚೇತರಕಅಂಶಗಳನ್ನುಅಧ್ಯಯನಮಾಡುವಉದ್ದೇಶದಂದ 1ಜನವರ, 2018 ಮತ್ತು 31 ಡಸಂಬರ್, 2018ರನಡುವನಡಸಲಾಗುತ್ತದ.

ನೀವು /
ನಿಮ್ಮಸಂಬಂಧಮನೋವೈದ್ಯಕೀಯಅನಾರೋಗ್ಯದಂದಬಳಲುತ್ತರುವಕಾರಣದಂದಾಗಚಕಿತ್ಸಅಗತ್ಯವಿರುತ್ತದ.ಆದ್ದರಂದ,
ಮೇಲನಸಂಶೋಧನವುರೋಗಗಳಸಮಾಜದೂಳಗಪರಣಾಮಕಾರಏಕೀಕರಣಕ್ಕಉತ್ತಮಗುಣಮಟ್ಟವನ್ನು ಒದಗಸಲುಸಹಾಯಮಾಡುತ್ತದ.

ಒಳಗೊಂಡಿರುವವಿಧವಿಧಾನ: ನೀವು / ನಿಮ್ಮಸಂಬಂಧಅಧ್ಯಯನದಒಂದುಭಾಗವಾಗಒಪ್ಪಿಕೂಂಡರ, ಮುಖ್ಯಸಂಶೋಧಕರುನಮಗ /
ನಿಮ್ಮಸಂಬಂಧಗಸಂದರ್ಶನಮಾಡುತ್ತಾರಮತ್ತುಪೂರ್ವಸೂಚನಯರೂಪದಪ್ರಕಾರವಿವರಗಳನ್ನುತಗದು ಕೂಳ್ಳುತ್ತಾರ.

ಅಪಾಯಗಳುಮತ್ತುಅನುಕೂಲಗಳು: ಒಳಗೊಂಡಿರುವಯಾವುದೇಅಪಾಯಗಳಿಲ್ಲ.

ಅಧ್ಯಯನದಅವಧಿಯಲ್ಲಿ,

ಮನೋವೈದ್ಯಕೀಯಅಸ್ವಸ್ಥತೆಗಳವಿಷಯದಲ್ಲಿಯಾವುದೇಮಹತ್ವಪೂರ್ಣಸಂಶೋಧನೆಗಳಅಸ್ತಿತ್ವಅಥವಾ

ಅಭಿವೃದ್ಧಿ, **ಮುಖ್ಯಸಂಶೋಧಕರಿಂದ**ನಿಮಗ / ನಿಮ್ಮಸಂಬಂಧಿತಳಿಸಲಾಗುವುದು.

ಪರ್ಯಾಯಗ : ಈಅಧ್ಯಯನದಲ್ಲಿನಿಮ್ಮ /

ನಿಮ್ಮಸಂಬಂಧಿಭಾಗವಹಿಸುವಿಕೆಯುಸಂಪೂರ್ಣವಾಗಿಸ್ವಯಂಪ್ರೇರಿತವಾಗಿರುತ್ತದೆ. ನೀವು /

ನಿಮ್ಮಸಂಬಂಧಿಅಧ್ಯಯನದಒಂದುಭಾಗವಾಗಿರಬೇಕೆಂದುಬಯಸದಿದ್ದರೆ, ನೀವು /

ನಿಮ್ಮಸಂಬಂಧಿಯಿಂದಲೇಹಿಂತೆಗೆದುಕೊಳ್ಳಬಹುದುಅಥವಾನೀವು /

ನಿಮ್ಮಸಂಬಂಧಿಈಗಾಗಲೇಅಧ್ಯಯನದಭಾಗವಾಗಿದ್ದರೆಮತ್ತುನೀವು /

ನಿಮ್ಮಸಂಬಂಧಿಬಯಸಿದರೆಯಾವುದೇಕಾರಣಕ್ಕಾಗಿಅಧ್ಯಯನದಿಂದಹಿಂದಕ್ಕೆಹೋಗಲುಬಯಸಿದರೆ,

ನೀವು / ನಿಮ್ಮಸಂಬಂಧಿಯಾವುದೇಹಿಂಜರಿಕೆಯಿಲ್ಲದೆಹಾಗೆಮಾಡಬಹುದು.

ಯಾವುದೇಕಾರಣಕ್ಕಾಗಿಅಧ್ಯಯನದಮುಂದುವರಿಕೆನಿಮ್ಮ /

ನಿಮ್ಮಸಂಬಂಧಿಪ್ರಸ್ತುತಅಥವಾಭವಿಷ್ಯದಸಂಬಂಧವನ್ನುಕ.ಎಲ್.ಇ.ಎಸ್ .ಡಾ.ಪ್ರಭಾಕರ್ಕೋರೆಆಸ್ಪತ್ರೆ,

ಬೆಳಗಾವಿಯಾವುದೇರೀತಿಯಲ್ಲಿಪರಿಣಾಮಬೀರುವುದಿಲ್ಲ.

ಗೌಪ್ಯತೆ :ನೀವು /

ನಿಮ್ಮಸಂಬಂಧಿಒದಗಿಸಿದಮಾಹಿತಿಯು**ಮುಖ್ಯಸಂಶೋಧಕರು**ಮತ್ತುಸಂಶೋಧನಾತಂಡದಸದಸ್ಯರಿಗೆತಿ

ಳಿದಿರುತ್ತದೆ. ಈಮಾಹಿತಿಯುಗೌಪ್ಯವಾಗಿಉಳಿಯುತ್ತದೆಮತ್ತುನಿಮ್ಮ /

ನಿಮ್ಮಸಂಬಂಧಿಕರಲಿಖಿತಅನುಮತಿಯಿಂದಿಗೆಅಥವಾಕಾನೂನಿನಅಗತ್ಯವಿದ್ದರೆಮಾತ್ರಇತರರಿಗೆಬಹಿರಂ

ಗಗೊಳ್ಳುತ್ತದೆ.

ಪಾಲ್ಗೊಳ್ಳುವಿಕೆಯಹಣಕಾಸಿನಪ್ರೋತ್ಸಾಹ: ನೀವು / ನಿಮ್ಮಸಂಬಂಧಪಾವತಿಸುವುದಿಲ್ಲ / ಸಂಶೋಧನೆಯಲ್ಲಿಪಾಲ್ಗೊಳ್ಳಲುಯಾವುದೇಉಡುಗೊರೆಗಳನ್ನುನೀಡಲಾಗುವುದಿಲ್ಲ.

ಸಂಶೋಧನೆಯಲ್ಲಿಪಾಲ್ಗೊಳ್ಳಲುಯಾವುದೇಸಂಭಾವನೆಇಲ್ಲಮತ್ತುನೀವು / ಬಸ್ / ರೈಲುಪ್ರಯಾಣ / ಸಹಯೋ / ಸಹಾಯಕಮುಂತಾದಯಾವುದೇಖರ್ಚುಗಳಿಗೆನೀವು / ನಿಮ್ಮಸಂಬಂಧಿಗಳನ್ನುಮರುಪಾವತಿಮಾಡಲಾಗುವುದಿಲ್ಲ.

ಫಲಿತಾಂಶಗಳನ್ನುಪ್ರಕಟಿಸಲುದೃಢೀಕರಣ:

ಸಂಶೋಧನೆಯಫಲಿತಾಂಶಗಳುಮುಖ್ಯಸಂಶೋಧಕರಿಂದಸಮಾವೇಶಗಳಲ್ಲಿಪ್ರಕಟವಾಗಬೇಕಾದರೆಅಥ ವಾಚರ್ಚಿಸಬೇಕಾದರೆ, ನಿಮ್ಮಮಾಹಿತಿಯನ್ನುನಿಮ್ಮ / ನಿಮ್ಮಸಂಬಂಧಿಯಗುರುತನ್ನುಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ.

Website: http://www.jnmc.edu
E-Mail : dome@jnmc.edu

Phone: (+ 91-(0)831 Office : 2471350
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 52 **Date: 22/11/2017**

To,

Dr. Punit Pradeep Mutalik,
PG student in Psychiatry,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"ASSESSMENT OF RECOVERY IN PATIENTS WITH SCHIZOPHRENIA: A 1 YEAR CROSS SECTIONAL HOSPITAL BASED STUDY",** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

ANNEXURE II

STUDY PROFORMA

ASSESSMENT OF RECOVERY IN PATIENTS WITH SCHIZOPHRENIA: A 1 YR CROSS-SECTIONAL HOSPITAL-BASED STUDY

Name: Age: Sex: M/F

Religion: Hindu/Muslim/Christian/Others Marital Status: Married/Unmarried

Place: Informant:

Socio-economic status:

Diagnosis:

Duration of illness:

Past treatment history:

Present treatment history:

Treatment adherence:

Family history of Schizophrenia: Y/N

Substance use:

Alcohol Nicotine Cannabis Any other drugs

General Physical Examination:

BP: PULSE: RR: TEMPERATURE:

Height: Weight: BMI:

Systemic Examination:

CNS:

CVS:

RS:

P/A:

Mental Status Examination:

Consciousness

Orientation

Speech

Thought

Mood

Affect

Perception

Insight

Application of Scales:

Mini International Neuropsychiatric Interview:

Brief Psychiatric Rating Scale Score:

Personal and Social Performance Score:

Discrimination and Stigma Scale - 12 Score:

ANNEXURE III

TOOLS
BRIEF PSYCHIATRIC RATING SCALE

CLIENT NAME: **DATE:**

CLIENT IP#:

BRIEF PSYCHIATRIC RATING SCALE (BPRS)

0 = not assessed, 1 = absent, 2 = very mild, 3 = mild, 4 = moderate, 5 = moderately severe, 6 = severe, 7 = extremely severe

1. **SOMATIC CONCERN** Degree of concern over present bodily health. Rate the degree to which physical health is perceived as a problem by the patient, whether complaints have a realistic basis or not. **SCORE**	10. **HOSTILITY** Animosity, contempt, belligerence, disdain for other people outside the interview situation. Rate solely on the basis of the verbal report of feelings and actions of the patient toward others; do not infer hostility from neurotic defenses, anxiety, nor somatic complaints. (*Rate attitude toward interviewer under "uncooperativeness"*). **SCORE**
2. **ANXIETY** Worry, fear, or over-concern for present or future. Rate solely on the basis of verbal report of patient's own subjective experiences. Do not infer anxiety from physical signs or from neurotic defense mechanisms. **SCORE**	11. **SUSPICIOUSNESS** Brief *(delusional or otherwise)* that others have now, or have had in the past, malicious or discriminatory intent toward the patient. On the basis of verbal report, rate only those suspicions which are currently held whether they concern past or present circumstances. **SCORE**
3. **EMOTIONAL WITHDRAWAL** Deficiency in relating to the interviewer and to the interviewer situation. Rate only the degree to which the patient gives the impression of failing to be in emotional contact with other people in the interview situation. **SCORE**	12. **HALLUCINATORY BEHAVIOR** Perceptions without normal external stimulus correspondence. Rate only those experiences which are reported to have occurred within the last week and which are described as distinctly different from the thought and imagery processes of normal people. **SCORE**
4. **CONCEPTUAL DISORGANIZATION** Degree to which the thought processes are confused, disconnected, or disorganized. Rate on the basis of integration of the verbal products of the patient; do not rate on the basis of patient's subjective impression of his own level of functioning. **SCORE**	13. **MOTOR RETARDATION** Reduction in energy level evidenced in slowed movements. Rate on the basis of observed behavior of the patient only; do not rate on the basis of patient's subjective impression of own energy level. **SCORE**
5. **GUILT FEELINGS** Over-concern or remorse for past behavior. Rate on the basis of the patient's subjective experiences of guilt as evidenced by verbal report with appropriate affect; do not infer guilt feelings from depression, anxiety or neurotic defenses. **SCORE**	14. **UNCOOPERATIVENESS** Evidence of resistance, unfriendliness, resentment, and lack of readiness to cooperate with the interviewer. Rate only on the basis of the patient's attitude and responses to the interviewer and the interview situation; do not rate on basis of reported resentment or uncooperativeness outside the interview situation. **SCORE**
6. **TENSION** Physical and motor manifestations of tension "nervousness", and heightened activation level. Tension should be rated solely on the basis of physical signs and motor behavior and not on the basis of subjective experiences of tension reported by the patient. **SCORE**	15. **UNUSUAL THOUGHT CONTENT** Unusual, odd, strange or bizarre thought content. Rate here the degree of unusualness, not the degree of disorganization of thought processes. **SCORE**
7. **MANNERISMS AND POSTURING** Unusual and unnatural motor benavior, the type of motor behavior which causes certain mental patients to stand out in a crowd of normal people. Rate only abnormality of movements; do not rate simple heightened motor activity here. **SCORE**	16. **BLUNTED AFFECT** Reduced emotional tone, apparent lack of normal feeling or involvement. **SCORE**

8. **GRANDIOSITY** Exaggerated self-opinion, conviction of unusual ability or powers. Rate only on the basis of patient's statements about himself or self-in-relation-to-others, not on the basis of his demeanor in the interview situation. **SCORE** ☐	17. **EXCITEMENT** Heightened emotional tone, agitation, increased reactivity. **SCORE** ☐
9. **DEPRESSIVE MOOD** Despondency in mood, sadness. Rate only degree of despondency; do not rate on the basis of inferences concerning depression based upon general retardation and somatic complaints. **SCORE** ☐	18. **DISORIENTATION** Confusion or lack of proper association for person, place or time. **SCORE** ☐

Personal and Social Performance Scale

The Personal and Social Performance Scale (PSP) is a copyrighted tool for which permission to use freely was granted on the condition that it will not be used for any other purposes except this study, and is not to be freely disseminated. To honour this condition, the scale is not attached to this dissertation copy.

Discrimination and Stigma Scale – 12

The Discrimination and Stigma Scale – 12 (DISC-12) is a copyrighted tool for which permission to use freely was granted on the condition that it will not be used for any other purposes except this study, and is not to be freely disseminated. To honour this condition, the scale is not attached to this dissertation copy.

S.N.	Age (years)	Sex	Domicile	Religion	SES	Marital Status	Informant	Family History of schizophrenia	Diagnosis	Age of onset	Duration of illness(Years)	Asymptomatic Duration (Months)	Present Treatment History	Generation of antipsychotic	Somatic Concern	Anxiety	Emotional Withdrawal	Conceptual Disorganization	Guilt Feelings	Tension	Mannerisms and Posturing	Grandiosity	Depressive Mood	Hostility	Suspiciousness	Hallucinatory Behaviour	Motor Retardation	Uncooperativeness	Unusual Thought Content	Blunted Affect	Excitement	Disorientation	BPRS Total	PSP
1	19	Male	Rural	Hindu	Lower	0	Mother	1	Paranoid	18	1	8	Trifluoperazine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	100-91 Excellent functioning in all four main areas
2	34	Male	Rural	Hindu	Lower	0	Sister	0	Paranoid	29	5	14	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	100-91 Excellent functioning in all four main areas
3	34	Male	Urban	Muslim	Lower	0	Father	0	Paranoid	28	6	8	Haloperidol	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
4	25	Male	Rural	Muslim	Lower Middle	0	Brother	0	Paranoid	21	4	6	Clozapine	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	90-81 Only common problems
5	37	Female	Rural	Muslim	Lower	1	Sister	0	Paranoid	29	8	14	Clozapine	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	19	90-81 Only common problems
6	28	Male	Urban	Muslim	Lower	0	Brother	1	Paranoid	25	3	6	Clozapine	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	90-81 Only common problems
7	33	Female	Urban	Hindu	Lower	1	Mother	0	Paranoid	26	7	9	olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
8	47	Female	Rural	Hindu	Lower middle	1	Husband	0	Paranoid	35	12	36	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
9	65	Male	Urban	Hindu	Upper lower	1	Wife	0	Paranoid	56	9	14	olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
10	42	Female	Urban	Hindu	Lower	1	Husband	0	Paranoid	37	5	8	Aripiprazole	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
11	30	Male	Rural	Hindu	Lower middle	0	Father	0	Paranoid	26	4	27	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
12	74	Male	Rural	Hindu	Lower	1	Sister	0	Paranoid	72	2	7	olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
13	35	Female	Urban	Hindu	Lower	1	Mother	0	Paranoid	28	7	48	Aripiprazole	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
14	28	Female	Rural	Hindu	Lower	1	Father	0	ndifferentiate	26	2	11	olanzapine	2	1	1	3	1	1	1	1	1	3	1	1	1	2	1	1	2	1	1	24	90-81 Only common problems
15	23	Male	Urban	Hindu	Lower	0	Father	0	Paranoid	21	2	14	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
16	30	Male	Rural	Hindu	Lower	1	Father	0	Paranoid	24	6	24	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
17	34	Female	Rural	Hindu	Upper middle	1	Sister	0	Paranoid	29	5	32	olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
18	29	Male	Rural	Hindu	Lower	0	Father	0	Paranoid	16	13	19	Clozapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
19	54	Male	Rural	Hindu	Lower	1	Wife	0	Paranoid	42	12	32	Haloperidol	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
20	28	Female	Rural	Hindu	Lower	1	Sister	0	Paranoid	25	3	11	Trifluoperazine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
21	38	Female	Rural	Hindu	Lower	1	Husband	0	Paranoid	33	5	9	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
22	36	Male	Rural	Hindu	Lower	1	Wife	0	Paranoid	35	1	7	Risperidone	2	1	1	1	1	1	1	1	1	1	2	2	2	3	1	1	3	1	1	25	90-81 Only common problems
23	32	Male	Rural	Hindu	Lower	1	Brother	0	Paranoid	26	6	25	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
24	32	Male	Rural	Hindu	Lower	1	Father	0	Paranoid	26	6	28	Trifluoperazine	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	90-81 Only common problems
25	63	Female	Rural	Hindu	Lower	1	Husband	0	ndifferentiate	38	25	38	olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
26	45	Female	Rural	Hindu	Lower	1	Husband	0	Paranoid	39	6	2	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	90-81 Only common problems
27	71	Male	Urban	Hindu	Lower	1	Wife	0	Paranoid	51	20	2	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	80-71 Mild difficulties in 1 or more of areas a-c
28	35	Male	Rural	Hindu	Lower	0	Father	0	Paranoid	28	7	4	Olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	80-71 Mild difficulties in 1 or more of areas a-c
29	37	Female	Rural	Hindu	Lower	1	Sister	0	Paranoid	29	8	5	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	80-71 Mild difficulties in 1 or more of areas a-c
30	56	Female	Urban	Hindu	Lower	1	Son	0	Paranoid	49	7	2	Olanzapine	2	1	1	1	1	1	1	1	1	2	1	1	1	3	1	1	2	1	1	22	80-71 Mild difficulties in 1 or more of areas a-c
31	43	Female	Rural	Hindu	Upper lower	1	Mother-in-la	0	Paranoid	35	8	1	Olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	100-91 Excellent functioning in all four main areas
32	63	Male	Rural	Hindu	Lower	1	Wife	0	Paranoid	41	22	5	Risperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	80-71 Mild difficulties in 1 or more of areas a-c
33	44	Female	Rural	Hindu	Lower	1	Father	0	ndifferentiate	37	7	4	Risperidone	2	1	1	2	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	21	80-71 Mild difficulties in 1 or more of areas a-c
34	32	Male	Rural	Hindu	Upper lower	0	Father	1	Paranoid	18	14	0	Olanzapine	2	1	1	6	4	1	1	1	1	1	1	3	4	5	5	1	6	1	1	44	80-71 Mild difficulties in 1 or more of areas a-c
35	21	Male	Rural	Hindu	Upper lower	0	Mother	0	Paranoid	19	2	3	Haloperidol	1	1	1	2	1	1	1	1	1	2	1	3	1	3	1	1	3	1	1	26	80-71 Mild difficulties in 1 or more of areas a-c
36	56	Female	Urban	Hindu	Lower middle	1	Son	0	Paranoid	50	6	0	Olanzapine	2	1	1	4	3	1	1	1	1	3	1	4	2	1	3	1	3	1	1	33	80-71 Mild difficulties in 1 or more of areas a-c
37	31	Female	Urban	Hindu	Lower	0	Mother	0	Paranoid	22	9	0	Haloperidol	1	1	1	1	1	1	1	1	1	1	1	5	4	3	1	2	3	1	1	30	80-71 Mild difficulties in 1 or more of areas a-c
38	28	Female	Urban	Hindu	Upper lower	0	Father	0	Paranoid	27	1	2	Olanzapine	2	1	1	3	2	1	1	1	1	2	1	2	3	1	1	1	3	1	1	27	80-71 Mild difficulties in 1 or more of areas a-c
39	20	Male	Rural	Hindu	Lower	0	Father	0	Paranoid	17	3	0	Risperidone	2	1	3	4	2	1	4	1	1	3	1	6	5	4	1	3	2	1	1	44	80-71 Mild difficulties in 1 or more of areas a-c
40	30	Female	Rural	Hindu	Upper lower	0	Mother	0	Paranoid	21	9	0	Risperidone	2	1	4	4	1	1	1	1	1	3	1	1	4	3	1	1	1	1	1	31	80-71 Mild difficulties in 1 or more of areas a-c
41	33	Female	Rural	Hindu	Lower	0	Brother	0	Paranoid	18	15	0	Risperidone	2	1	5	3	1	1	1	1	1	4	1	7	6	5	1	1	1	1	1	42	80-71 Mild difficulties in 1 or more of areas a-c
42	38	Male	Rural	Hindu	Lower	1	Sister	0	Paranoid	33	5	0	Risperidone	2	2	5	2	2	1	5	1	1	4	1	7	6	3	1	5	1	1	1	49	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d
43	24	Female	Rural	Hindu	Upper middle	0	Brother	0	Paranoid	21	3	0	Haloperidol	1	2	3	4	1	1	1	1	1	3	1	3	3	5	2	1	4	1	1	38	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d
44	24	Male	Rural	Hindu	Lower middle	0	Mother	0	Paranoid	21	3	0	Olanzapine	2	1	1	3	1	1	1	1	1	1	1	4	2	5	1	1	4	1	1	31	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d
45	28	Male	Urban	Muslim	Lower middle	0	Father	0	Paranoid	23	5	0	Haloperidol	1	3	2	4	1	1	1	1	1	3	1	5	4	4	1	1	3	1	1	38	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d
46	28	Male	Rural	Hindu	Lower middle	0	Mother	0	ndifferentiate	16	12	8	Iloperidone	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d
47	36	Male	Urban	Christian	Upper lower	1	Wife	0	Paranoid	30	6	0	Amisulpiride	2	1	1	1	1	1	1	1	1	1	1	6	5	2	1	4	1	1	1	31	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d
48	23	Female	Urban	Hindu	Upper lower	0	Father	1	Paranoid	18	5	0	Risperidone	2	3	4	3	2	1	3	1	1	4	1	6	6	5	1	3	4	1	1	50	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d
																																		70-61 Manifest but not marked difficulties in 1 or more areas

S.N.	PSR	Complete Remission	Functional Remission	Recovery	keeping friends	neighbourhood_	close relationships	housing	education	marriage	by family members	finding a job	keeping a job	public transport	disability pensions	religious practices	social life	police	physical problems	mental health staff	privacy	verbal/physical abuse	starting a family	role as a parent	avoided by people	1 - Unfair treatment	stopped applying for a job	stopped training coures	stopped personal relationship	concealed illness	2 - Stopping self	friend using mental health services	able to cope	3 - Overcoming stigma	special treatment by fa,ily	special treatment in disability pensions	special treatment housing	special treatment religious activities	positively in employment	positively in any other area	4 - Positive treatment
1	1	1	1	1	1	1	1	NA	1	NA	0	NA	NA	NA	NA	0	1	NA	0	0	1	0	NA	NA	1	9															
2	1	1	1	1	0	1	1	NA	NA	1	1	1	NA	0	NA	1	1	NA	0	0	1	1	NA	NA	1																
3	1	1	1	1	1	1	NA	NA	NA	0	0	NA	NA	0	NA	0	1	0	0	0	0	0	1	1	0	5	NA	NA	NA	1	1	NA	3	3	0	0	NA	0	NA		0
4	1	1	1	1	0	0	NA	NA	NA	NA	0	NA	NA	0	NA	1	1	NA	0	0	1	0	0	NA	1	4	2	2	1	2	7	NA	3	3	0	0	NA	0	NA		0
5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	2	0	0	0	0	0	0	NA	0	1	0	0	0	0		1
6	1	1	1	1	0	1	0	0	0	NA	0	NA	NA	0	0	0	1	0	0	0	1	0	0	1	1	5	NA	0	1	1	2	2	3	5	1	1	NA	1	NA		3
7	1	1	1	1	0	1	1	NA	NA	1	1	NA	NA	0	NA	1	1	NA	0	0	1	1	1	1	1																
8	1	1	1	1	0	1	NA	NA	NA	0	0	NA	NA	0	NA	0	0	0	0	0	0	0	NA	1	1	5	NA	NA	0	2	2	NA	3	3	1	NA	NA	0	NA		1
9	1	1	1	1	1	1	0	NA	NA	0	0	NA	NA	0	1	1	0	0	0	0	0	0	NA	NA	0																
10	1	1	1	1	0	1	NA	NA	NA	NA	0	NA	NA	0	NA	0	1	NA	0	0	0	0	0	1	1	4	NA	NA	0	1	1	NA	3	3	1	NA	NA	0	NA		1
11	1	1	1	1	0	1	1	NA	0	1	0	0	0	0	NA	0	0	0	0	0	0	0	NA	NA	1	4	0	0	0	2	2	NA	3	3	1	NA	NA	0	0		1
12	1	1	1	1	0	1	0	NA	NA	1	0	NA	NA	0	NA	0	1	0	0	0	0	0	NA	0	1																
13	1	1	1	1	0	1	NA	NA	NA	1	0	0	0	0	NA	0	0	0	0	0	0	0	NA	1	1	5	0	0	1	1	2	NA	3	3	1	NA	NA	0	0		1
14	1	1	1	1	0	1	1	NA	NA	1	0	NA	NA	0	NA	1	1	NA	0	0	1	1	1	NA	0																
15	1	1	1	1	1	1	1	NA	NA	1	1	1	NA	0	NA	1	1	NA	0	0	1	1	NA	NA	0																
16	1	1	1	1	1	1	NA	NA	0	1	1	1	1	0	NA	1	1	NA	0	0	0	0	NA	0	1	11	1	NA	3	3	7	NA	1	1	0	NA	0	1	NA		1
17	1	1	1	1	1	1	NA	NA	NA	NA	0	NA	NA	0	0	0	1	0	0	0	1	0	1	1	1	10	NA	NA	1	2	3	NA	3	3	2	0	NA	0	0		2
18	1	1	1	1	0	1	NA	NA	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	NA	1	7	2	NA	2	3	7	NA	2	2	1	0	NA	1	0		2
19	1	1	1	1	1	1	NA	NA	NA	NA	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	3	0	0	0	2	2	0	3	3	1	0	0	0	0		1
20	1	1	1	1	1	1	0	NA	NA	1	1	NA	NA	0	NA	1	0	NA	1	1	1	1	1	0	0																
21	1	1	1	1	1	1	0	NA	NA	NA	1	NA	NA	NA	NA	1	1	NA	0	0	0	1	NA	0	1	11	NA	NA	1	3	4	NA	2	2	2	NA	NA	2	NA		4
22	1	1	1	1	1	1	1	NA	NA	1	0	0	0	0	NA	0	0	0	0	0	0	1	NA	NA	0																
23	1	1	1	1	0	1	0	NA	NA	1	0	1	1	0	NA	1	1	NA	0	1	1	0	1	1	1	13	1	NA	0	3	4	NA	2	2	2	NA	NA	1	0		3
24	1	1	1	1	1	1	0	NA	NA	1	0	1	1	NA	NA	1	1	NA	0	0	1	1	1	1	1	17	0	NA	1	3	4	NA	2	2	1	NA	NA	2	0		3
25	1	1	1	1	1	1	1	NA	NA	NA	0	NA	NA	NA	NA	1	0	NA	0	0	0	0	NA	1	1	8	NA	NA	0	1	1	NA	3	3	1	NA	NA	2	NA		3
26	1	0	1	0																																					
27	1	0	1	0																																					
28	1	0	1	0																																					
29	1	0	1	0																																					
30	1	0	1	0																																					
31	1	0	1	0																																					
32	1	0	1	0																																					
33	1	0	1	0																																					
34	0	0	1	0																																					
35	1	0	1	0																																					
36	0	0	1	0																																					
37	0	0	1	0																																					
38	1	0	1	0																																					
39	0	0	1	0																																					
40	0	0	1	0																																					
41	0	0	1	0																																					
42	0	0	0	0																																					
43	0	0	0	0																																					
44	0	0	0	0																																					
45	0	0	0	0																																					
46	1	1	0	0																																					
47	0	0	0	0																																					
48	0	0	0	0																																					

51	54	Female	Urban	Hindu	Lower	1	Daughter	0	Paranoid	44	10	0	Risperidone	2	1	4	2	1	1	4	1	1	1	2	6	3	1	1	5	2	1	1	38	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
52	28	Male	Rural	Hindu	Lower	0	Father	0	Paranoid	22	6	0	Clozapine	2	1	3	4	1	1	1	1	1	1	1	4	5	3	1	1	3	1	1	34	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
53	49	Male	Rural	Muslim	Lower	1	Nephew	0	Paranoid	32	17	0	Risperidone	2	3	1	6	3	1	1	1	1	1	1	1	3	5	1	1	5	1	1	37	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
54	42	Male	Urban	Hindu	Upper middle	1	Mother	1	Paranoid	22	20	0	Amisulpiride	2	3	6	2	2	1	5	1	1	5	1	7	6	2	1	6	2	1	1	53	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
55	22	Male	Rural	Hindu	Upper lower	0	Mother	0	ndifferentiate	11	11	0	Amisulpiride	2	1	2	5	2	1	1	1	1	1	3	2	1	5	2	1	4	1	1	35	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
56	34	Male	Urban	Hindu	Upper lower	1	Father	0	ndifferentiate	28	6	0	Olanzapine	2	1	1	6	3	1	1	1	1	3	1	2	4	6	1	3	6	1	1	43	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
57	66	Female	Urban	Hindu	Lower	1	Son	1	Paranoid	59	7	0	Haloperidol	1	2	3	3	1	1	1	1	1	1	1	4	2	1	1	1	1	1	1	27	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
58	42	Male	Rural	Hindu	Lower	0	Mother	0	Paranoid	41	1	11	Trifluoperazine	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**1**	**1**	**0**	**0**
59	39	Female	Urban	Muslim	Lower	0	Sister	0	Paranoid	30	9	0	Aripiprazole	2	2	1	4	1	1	1	1	1	1	1	3	4	3	1	1	4	1	1	32	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
60	40	Male	Rural	Hindu	Upper lower	0	Father	0	Paranoid	30	10	0	Risperidone	2	1	1	5	2	1	1	1	1	3	1	6	6	4	2	6	6	1	1	49	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
61	58	Female	Urban	Hindu	Lower	1	Husband	0	Paranoid	24	34	4	Olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	20	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
62	44	Female	Rural	Hindu	Lower	1	Son	0	Paranoid	33	11	0	Risperidone	2	1	3	3	1	1	1	1	1	2	1	6	5	3	1	1	1	1	1	34	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
63	66	Female	Urban	Hindu	Upper lower	1	Son	1	Paranoid	46	20	0	Olanzapine	2	3	5	1	2	1	3	1	1	1	4	6	7	2	2	6	4	2	1	52	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
64	32	Female	Urban	Hindu	Upper lower	0	Mother	0	Paranoid	26	6	0	Trifluoperazine	1	1	3	2	1	1	3	1	1	1	1	5	4	3	1	5	4	1	1	39	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
65	30	Male	Urban	Hindu	Lower	0	Mother	0	Paranoid	22	8	0	Risperidone	2	1	3	2	1	1	4	1	1	3	2	6	3	2	1	2	1	1	1	36	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
66	53	Male	Rural	Hindu	Lower	1	Wife	0	Paranoid	38	15	0	Olanzapine	2	1	1	4	1	1	1	1	1	2	1	5	4	3	1	1	4	1	1	34	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
67	40	Male	Rural	Hindu	Lower	0	Sister	0	Paranoid	30	10	0	Trifluoperazine	1	1	3	4	1	1	1	1	1	3	1	3	4	3	1	1	5	1	1	36	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
68	34	Male	Rural	Hindu	Upper lower	0	Sister	0	Paranoid	28	6	0	Haloperidol	1	6	1	5	1	1	1	1	1	4	1	5	3	4	1	6	6	1	1	49	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
69	27	Female	Urban	Hindu	Lower middle	0	Father	1	ndifferentiate	23	4	0	Risperidone	2	1	1	5	1	1	1	1	1	3	1	4	4	6	1	1	6	1	1	40	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
70	24	Male	Urban	Hindu	Upper lower	0	Mother	0	Paranoid	22	2	2	Haloperidol	1	1	1	3	1	1	1	1	1	1	1	3	2	3	1	1	4	1	1	28	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
71	32	Male	Rural	Hindu	Lower	0	Father	0	Catatonic	29	3	0	Aripiprazole	2	1	1	3	1	1	1	5	1	4	1	3	3	5	1	1	5	1	1	39	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
72	24	Male	Urban	Hindu	Lower	0	Mother	0	Paranoid	22	2	0	Haloperidol	1	1	1	4	1	1	1	1	1	3	1	3	5	4	1	3	5	1	1	38	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
73	32	Male	Rural	Muslim	Lower	0	Sister	1	ndifferentiate	29	3	13	Olanzapine	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**1**	**1**	**0**	**0**
74	36	Male	Urban	Hindu	Upper lower	0	Brother	0	Paranoid	31	5	0	Risperidone	2	1	1	4	1	1	1	1	1	3	1	5	6	4	1	1	6	1	1	40	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
75	30	Male	Rural	Hindu	Upper lower	0	Sister	0	Paranoid	27	3	0	Trifluoperazine	1	1	1	1	1	1	1	1	1	1	1	4	6	4	1	1	4	1	1	32	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
76	47	Male	Rural	Hindu	Upper	1	Brother	0	Paranoid	25	22	0	Risperidone	2	1	2	1	3	1	1	1	1	3	1	4	5	2	1	6	2	1	1	37	70-61 Manifest but not marked difficulties in 1 or more areas a-c or mild difficulties in d	**0**	**0**	**0**	**0**
77	53	Female	Rural	Hindu	Lower	1	Husband	0	Catatonic	39	14	3	Olanzapine	2	1	1	3	1	1	1	1	1	2	1	1	1	4	1	1	2	1	1	25	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
78	31	Male	Urban	Hindu	Upper lower	0	Brother	0	Paranoid	27	4	0	Risperidone	2	1	3	5	3	1	1	1	1	4	2	6	5	5	2	1	3	1	1	46	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
79	34	Female	Rural	Hindu	Upper middle	0	Father	0	ndifferentiate	26	8	0	Olanzapine	2	1	1	6	3	1	1	1	1	4	1	1	4	5	2	1	5	1	1	40	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
80	44	Female	Urban	Hindu	Lower	1	Husband	0	Paranoid	42	2	0	Aripiprazole	2	1	1	2	1	1	1	1	1	1	1	4	1	1	1	1	2	1	1	23	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
81	38	Female	Rural	Hindu	Lower	0	Sister	0	Paranoid	26	12	0	Risperidone	2	1	1	4	1	1	1	1	1	4	1	5	6	5	1	1	6	1	1	42	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
82	23	Female	Rural	Hindu	Upper lower	0	Mother	0	ndifferentiate	21	2	0	Risperidone	2	1	1	6	4	1	1	7	1	2	1	4	5	6	4	4	7	1	1	57	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
83	29	Female	Rural	Hindu	Upper lower	0	Father	0	Paranoid	25	4	0	Aripiprazole	2	1	4	1	1	1	1	1	1	4	1	5	6	1	1	4	4	1	1	39	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
84	34	Female	Rural	Hindu	Lower	0	Mother	0	Paranoid	27	7	0	Olanzapine	2	3	4	2	1	1	1	1	1	2	3	6	5	3	6	1	4	1	1	46	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
85	56	Female	Urban	Hindu	Lower	1	Son	0	Paranoid	50	6	0	Olanzapine	2	3	1	5	3	1	1	1	1	2	1	3	3	3	1	1	4	1	1	36	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
86	22	Female	Urban	Hindu	Upper lower	0	Mother	0	ndifferentiate	21	1	0	Olanzapine	2	3	1	6	4	1	1	1	1	6	1	2	2	5	1	1	6	1	1	44	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
87	38	Male	Rural	Hindu	Lower	1	Father	0	Paranoid	24	14	7	Risperidone	2	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1	3	1	23	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**1**	**1**	**0**	**0**
88	45	Male	Rural	Hindu	Lower	1	Mother	0	Paranoid	39	6	0	Olanzapine	2	1	1	3	1	1	1	1	1	1	1	2	5	4	1	1	4	1	1	31	60-51 Marked difficulties in 1 of areas a-c or manifest difficulties in d	**0**	**0**	**0**	**0**
89	42	Male	Rural	Hindu	Lower	1	Wife	0	Paranoid	39	3	0	Olanzapine	2	2	1	5	2	1	1	1	1	2	1	2	1	5	1	1	3	1	1	32	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
90	22	Male	Urban	Hindu	Upper	0	Sister	0	Paranoid	18	4	0	Clozapine	2	1	1	4	2	1	3	1	1	5	3	4	3	1	1	6	1	1	1	40	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
91	31	Male	Urban	Muslim	Lower	0	Brother	0	ndifferentiate	27	4	0	Amisulpiride	2	1	1	5	1	1	1	1	1	3	1	6	6	5	1	1	6	1	1	43	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
92	26	Male	Rural	Hindu	Upper lower	0	Sister	0	Paranoid	23	3	0	Risperidone	2	1	1	1	1	1	1	1	1	3	1	4	5	3	1	1	5	1	1	33	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
93	33	Female	Urban	Hindu	Lower	0	Brother	0	Paranoid	28	5	0	Risperidone	2	1	1	4	1	1	1	1	1	1	1	6	6	4	1	5	6	1	1	43	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
																																		50-41 Marked difficulties in 2 or more, or severe difficulties in				

95	32	Female	Rural	Hindu	Lower	0	Uncle	0	Paranoid	30	2	0	Risperidone	2	5	3	5	2	1	3	1	1	1	1	6	2	4	1	4	1	1	1	43	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
96	31	Male	Rural	Hindu	Upper lower	0	Father	0	ndifferentiate	22	9	0	Risperidone	2	1	2	4	1	1	1	1	1	2	4	4	2	3	1	1	4	1	1	35	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
97	31	Male	Rural	Muslim	Upper lower	0	Father	1	Paranoid	27	4	0	Aripiprazole	2	1	1	1	1	1	1	1	1	1	3	2	1	1	3	3	1	3	1	27	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**1**	**0**	**0**	**0**
98	28	Male	Rural	Hindu	Lower	0	Brother	0	Paranoid	25	3	0	Olanzapine	2	1	3	4	1	1	1	1	1	6	1	6	1	5	1	5	2	1	1	42	50-41 Marked difficulties in 2 or more, or severe difficulties in 1 of areas a, with or without manifest difficulties in d	**0**	**0**	**0**	**0**
99	31	Female	Urban	Hindu	Lower	0	Father	0	ndifferentiate	24	7	0	Risperidone	2	2	5	6	5	1	3	1	3	3	3	5	4	3	2	1	5	2	1	55	40-31 Severe difficulties in 1 and marked difficulties in at least 1 of areas a-c. or marked difficulties in d	**0**	**0**	**0**	**0**
100	43	Male	Rural	Hindu	Lower	1	Mother	1	Paranoid	28	15	0	Haloperidol	1	1	3	4	2	1	6	1	1	2	1	6	4	4	1	4	4	1	1	47	40-31 Severe difficulties in 1 and marked difficulties in at least 1 of areas a-c. or marked difficulties in d	**0**	**0**	**0**	**0**