

**ATTITUDE TO MEDICATION AND INSIGHT
IN PATIENTS WITH SCHIZOPHRENIA**

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held in April, 2013**

CERTIFICATE

I hereby declare that this dissertation titled “ATTITUDE TO MEDICATION AND INSIGHT IN PATIENTS WITH SCHIZOPHRENIA”, is a bonafide work done by **DR. SUBHALAKSHMI T. P.** under my guidance at the Department of Psychiatry, Christian Medical College. This work has not been submitted to any University in part or full.

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DECLARATION

I hereby declare that this dissertation titled, “ATTITUDE TO MEDICATION AND INSIGHT IN PATIENTS WITH SCHIZOPHRENIA”, is a bonafide work done by me under the guidance of Dr. SUJA KURIAN, Professor of Psychiatry, Christian Medical College, Vellore. This work has not been submitted to any university in part or full.

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Thesis Abstract

ATTITUDE TOWARDS MEDICATION AND INSIGHT IN SCHIZOPHRENIA

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OBJECTIVES:

1. To assess the level of insight and attitude towards medication in patients with chronic Schizophrenia.
2. To determine factors associated with insight and attitude to medication in patients with chronic schizophrenia.
3. To determine the relationship between insight and attitude to medication in this group of patients with chronic schizophrenia.

METHODS:

A cross-sectional survey of insight into the illness and attitude towards medication of consenting patients suffering from chronic schizophrenia using the schedule for assessment of insight (SAI-E) and drug attitude inventory (DAI). Clinical assessment of psychopathology using PANSS and assessment of treatment adherence using subjective (Morisky Scale) and objective (chart review) were done to supplement assessment of relation between severity of illness, insight, attitude towards medications and compliance to medications in consecutively recruited outpatients. Data

was analyzed using chi square statistics for significant association with a corresponding p value of less than 0.05 suggesting statistically significant association between the variables.

RESULTS:

All the 101 patients suffering from chronic schizophrenia were found to be mild to moderately ill in terms of psychopathology and had good to moderate insight into their illness. Those who had good insight into their illness expectedly had a favorable attitude towards medications. The degree of psychopathology was inversely correlated with insight into the illness and compliance to medications. Compliance to medications is a larger complex construct which seems to be affected by the severity of illness; however neither good insight into the illness nor a favorable attitude towards medications seems to significantly alter the rates of compliance to treatment.

INSIGHT AND ATTITUDE TO MEDICATION IN SCHIZOPHRENIA

INTRODUCTION

Schizophrenia, with an approximate lifetime risk of 1 in 100, and an annual incidence of 0.5 to 5.0 per 10,000, is one of the leading causes of disability in the world. As per the assessment of leading cause of years lived with disability, worldwide statistics showed that schizophrenia ranks ninth in the order among various other disorders that causes disability to an individual. (WHO, 2005)

The onset of schizophrenia is usually in early adulthood. Schizophrenia has an earlier onset in males. The mean ages of onset are 20 and 25 years in males and females respectively (Easton and Chen, 2006) . The course is varied depending upon multiple factors including patient characteristics, severity of illness, availability of treatment, response and adherence to medications, and the availability of rehabilitation services. Irrespective of the course, the illness is marked by impairment and disability in socio occupational functioning, the extent of which is influenced by presence of residual psychotic symptoms. The early onset and chronic course adversely affect interpersonal, familial, occupational, financial and social domains. The stigma associated with the disorder further delays the identification, diagnosis and treatment. In addition, schizophrenia predisposes the affected to medical co morbidities, resulting in poorer outcomes. Only about half of all patients with schizophrenia receive treatment. It has been shown that early intervention can improve the outcome of treatment and that long duration of untreated psychosis can lead to poor treatment response(Kane, 2006) .

Treatment of Schizophrenia

The treatment of schizophrenia can be divided into pharmacological and non-pharmacological.

The non-pharmacological treatment methods include psychotherapy; cognitive behavior therapy, family therapy and electroconvulsive therapy (Sadock & Sadock, 2007) Pharmacological treatment involves mainly treatment with antipsychotic group of medication. Since the introduction of Chlorpromazine in the 1950s a number of antipsychotics have been marketed. They are broadly divided into first generation and second-generation antipsychotics. Introduction of this group of medication has changed the outcome of this disorder in many patients. In spite of the availability of large number of medications the deciding factor for a successful treatment will be patient's compliance with treatment. However treatment adherence and remission of the active phase of the disorder are not achieved in a large group of patients with schizophrenia.

When individuals with schizophrenia do not perceive themselves as ill, they are less likely to seek or remain in treatment. Such patients may not appreciate the benefits of treatment fully, and may put themselves at higher risk of discontinuing treatments. This in turn may increase the risk of relapse. Poor insight into illness and a not favourable attitude toward medications may thus be important determinants of clinical and occupational outcome and may offer useful avenues for intervention by the treatment team.

The study on the patient's insight and attitude to medication will help health care professionals in understanding the patients' problem; their concerns and appropriate steps can be taken to overcome the problem of non-compliance. Patients may tend to discontinue treatment when they become asymptomatic. Another reason for poor compliance may be the stigma associated with mental illness. Patients' attitude to medication and compliance also matter towards treatment.

The present study is an attempt at learning more about the interaction between the four variables of insight, psychopathology, attitude to medication and adherence in patients with schizophrenia. The psychopathology, insight about the disorder and attitude towards treatment in general and medication in particular are all inter linked and may influence the treatment adherence and outcome. The study is planned in a hospital-based sample, on out patients with a diagnosis of schizophrenia, which was made using International Classification of Diseases and related health problems, tenth revision criteria.

REVIEW OF LITERATURE

Schizophrenia

Schizophrenia is a major psychiatric disorder which is complex in nature, with multiple groups of symptoms. These symptoms are usually grouped into three under positive, negative and cognitive symptoms. It affects different areas of patient's life, leading to marked impairment on individual's functioning in the society. The impact of this disorder on the patient, his or her family, work and social life is huge. Treatment of schizophrenia thus becomes extremely important. Outcome in Schizophrenia can be viewed not only as improvement in psychopathology but also as improvement in the various domains of patient's life including community functioning and self-satisfaction.

However treatment of schizophrenia is made difficult by different factors. These include factors related to the disorder, the patient, the treatment modalities, the therapist, the family or the social milieu. When we consider the first two, namely factors related to the disorder and the patient, psychopathology, insight, attitude of the patient to treatment and compliance of the patient to treatment can be seen as important components. Poor insight and denial of illness are common in patients with schizophrenia. They are widely believed to affect the treatment adversely. How the different components like psychopathology, insight, attitude to medication and treatment compliance interact with one another becomes important in the management of this major mental illness which has a prevalence of 1% worldwide.

In the CATIE study (Lieberman et al., 2005) though no difference was found between the effectiveness of the two groups of antipsychotics, namely first generation and second

generation, it was found that compliance with medication is a major problem. Seventy-four percent of patients discontinued the study medication before 18 months. It has been shown that even brief periods of partial non-adherence lead to greater risk of relapse than what is commonly assumed (Masand et al., 2009) . Compliance with medication thus becomes a crucial variable in the prognosis of schizophrenia.

Poor adherence to medication is a well-known phenomenon in clinical practice . This is applicable to all medical specialties. And adherence is not an all or none issue either. Most patients may be partially adherent.

Notably, treatment adherence is considered to have a major influence on achieving clinical remission (San et al., 2007).

Moreover, patients who fail to take their medication as prescribed are at an increased risk of relapse (Masand and Narasimhan, 2006).

A review of articles by Masand et al., (2009) published between the years 1980 and 2008 about adherence by , compliance and Schizophrenia reveals that failure to adhere to medication as prescribed can have a major impact on the course of illness and treatment outcomes. Even relatively short gaps in medication coverage increase the risk of relapse. Problems with adherence are common early in the course of illness, when the impact of relapse can be particularly devastating. They conclude that clinicians in primary care and psychiatric settings need to be vigilant for signs of adherence problems among their patients. They should be ready to act when necessary to prevent or reduce the consequences of inadequate medication cover. Relapse prevention strategies, particularly for patients with early psychosis, should include ensuring that medication is taken

regularly. The impact of psychotic relapse on the course of illness is huge and relapse prevention strategies should encourage greater awareness of the consequences of partial adherence and should incorporate the necessary steps to minimize or eliminate the problem, especially during the early stages of the illness (Masand et al., 2009).

With regard to schizophrenia, there have been advances related to treatment options over the past few years. In spite of this, schizophrenia continues to be one of the most disabling diseases in psychiatry. Treatment of schizophrenia is made complex by the different issues that need to be considered with regard to the choice of medication. Medication has to be chosen keeping in mind the past history of drug response, the psychopathology, comorbidities, and the side effect profile. In addition to these, the patients preference and long term objectives also need to be considered. A lot more needs to be known with regard to the development of the illness, to help therapists deliver personalized treatment (Kane, 2006)

Insight

Assessment in clinical psychiatry terms insight as “ patients’ capacity to understand the nature, significance and severity of his or her illness” (Sims A, 2009) Such an insight has major implications for phenomenology, clinical management, coping, help seeking and compliance towards treatment.

Sadock & Sadock (2007) defines insight as a patient’s degree of awareness and understanding about being ill. They may show complete denial of their illness or may

show some awareness that they are ill but may place the blame on others, on outside factors or even on physical factors.

Sadock & Sadock(2007) divide insight in to six levels.

1. Total denial of illness.
2. Some awareness of sickness, however denying it at the same time.
3. Aware that they are sick but attributing it to factors out side their mind.
4. Aware that illness is due to something unknown in themselves.
5. Admission that they are ill and that it is due to their own psychological factors ; however they are not able to apply this awareness to master the situation or for future experiences. Not able to effect an adaptive change in their behaviour. This is termed intellectual insight.
6. Emotional insight which is described as the awareness of one's own emotions and motives and the important people behind one's behaviour; this leading to basic changes in behaviour.

Impaired insight is the reduced ability to understand the reality of the situation. Patients with schizophrenia are said to have poor insight in to the nature and the severity of their illness. And this poor insight may cause poor treatment adherence. Insight involves various aspects like awareness of symptoms, difficulty in getting along with others and the reasons for these problems (Sadock and Sadock, 2007)

Patients with schizophrenia showed limited awareness about their illness, even though they were aware of their deficits. It has been suggested that treatment may have to be targeted at specific realms of insight (Arango and Amador, 2010).

The concept of insight has undergone considerable changes during the past 100 years. Initially insight was defined as a single dimension of awareness of having a disorder. It was applied as if the patient either possessed insight or lacked it completely. Later writers developed insight into a multidimensional and continuous construct (Mintz et al., 2003). The different dimensions of awareness, attribution and action now evaluate patients. First dimension includes the extent of the awareness about illness, its signs and symptoms, and the need for treatment. The degree to which they attribute the benefits to treatment, accept the illness label and understand the social consequences of illness are also included in insight (Amador and Kronengold, 2004).

Literature has categorized patients with schizophrenia into three groups: those with full insight (aware correct attributers) are the first group. The second group are those aware of being unwell, but who misattributed their symptoms (aware, incorrect attributers). The third group comprises of those who are unaware of being ill (unaware) (Mysore et al., 2007). Studies have documented the inverse relationship between psychopathology and insight (Saravanan et al., 2007), (Amador, X. F and David, A. S., 1998), (Saravanan et al., 2010), (Drake et al., 2007)

Arango wonders whether impairment in insight is a cognitive deficit, anosognosia. Those patients with anosognosia were completely unaware of the deficits. And most studies of nonadherence and partial adherence to treatment find that the best predictor is unawareness of illness or poor insight. Problems with illness awareness are associated with neuropsychological deficits and are predictive of poor treatment compliance and poorer outcomes. There are suggestions to include this dimension of illness awareness in future diagnostic systems, as a specifier for schizophrenia (Arango and Amador, 2010).

Among factors influencing insight are baseline intelligence, duration of untreated psychosis and personality traits (Parellada et al., 2009).

Insight among patients with Schizophrenia is found to be associated with the emotional responses of the relatives and their insight into the illness (Brent et al., 2011).

There have been recent findings arguing for an evolving rather than a static concept of insight; that insight and illness perspectives are coping mechanisms secondary to psychopathology and course of the illness (Johnson et al., 2012).

In a study by Shankar et al (2006) done among patients from a South Indian population, on the insight of patients with psychotic disorders, it was reported that about 25.3% were aware of illness, 21% were moderately aware and about 43.3% were unaware of illness (Explanatory model of illness among patients with chronic mental disorders attending traditional healers, 1998). Poor insight in psychosis is due to a lack of awareness of having an illness and its deficits, its consequences and awareness that he/ she needs

treatment for their deficit. Poor insight and denial of illness are prevalent features of schizophrenia that is widely believed to have adverse clinical effects.

Among those suffering from schizophrenia, about 50% fail to recognize their disease or the necessity for medication. Many causative models and treatment strategies have been discussed for deficiency of insight. Treatment strategies are mainly focused on helping patients cope with the disease(Baier, 2010).

Metacognition and insight

There are different theories regarding the origins of poor insight in schizophrenia. One such theory suggest that it may result, in part, from deficits in metacognitive capacity. The ability to think about thinking, both one's own and the thinking of others, is termed metacognitive capacity. This has been studied and it is found that in persons with Schizophrenia the lack of metacognition may be linked to insight independent of concurrent other impairments in neurocognition from Indianapolis(Lysaker et al., 2011).

An important extension of the insight concept was introduced with the description of “cognitive insight”. It is defined as a patient’s current capacity to evaluate his or her abnormal and atypical experiencesand interpretations of events. In contrast to patients with nonpsychotic disorders (eg, depression or panic disorder), patients with psychosis are severely limited in their capacity to evaluate their problems, to recognize the cognitive errors and correct them.

Taking a cognitive view on insight, one can describe patients to have impairment in the ability to be objective about their psychotic experience, with a decreased capacity to put

them in perspective, with resistance to receiving corrective information from others and increased confidence in their judgements (Beck et al., 2011).

The Beck Cognitive Insight Scale (BCIS) measures patients' capacity for distancing themselves from and re-evaluating abnormal beliefs and misinterpretations (Beck et al., 2004)

The assessment of insight

The assessment of “clinical insight” has become invaluable for the formulation and treatment of psychosis. There are various tools available to measure insight. One such is the SAI-E.

Schedule for Assessment of Insight: Expanded Version (SAI-E)

The expanded version of the Schedule for Assessment of Insight has been applied widely in Western and nonWestern countries for the assessment of insight. It comprises questions to assess three dimensions of insight: awareness, relabelling of symptoms and adherence to treatment, plus labelling a hypothetical contradiction item added to evaluate the person's capacity to consider other's perspective. Each dimension comprises two or three questions which are scored on a 3 point scale from 0 (no insight) to 2(good insight). The supplementary question is scored from 0-4 and this is added to the total score. This expanded version also includes items on awareness of change, difficulties resulting from the psychiatric condition and insight into key symptoms(Kemp, R. and David, A., 1997)

Insight and Depression

The relationship between insight and depression has also been studied. Does depression result from good insight? Depression with its risk of suicide, if related to good insight, may in turn contribute to suicide risk. The improvement in insight positively correlates with level of dysphoria. Hence, poor insight may protect against depression in the early stages of recovery from Schizophrenia. Depression has been found to be associated with lower levels of insight in contradiction to previous findings(Arango and Amador, 2010).

Insight and Psychopathology

Many of the earlier studies conclude that insight and psychopathology have an inverse relationship(Saravanan et al., 2007)(Amador, X. F and David, A. S., 1998)

This is supported by western and non-western studies. For example in the study done by Sulekha et al, (2009) in Vellore, the analysis brought out significant inverse correlation between insight and psychopathology. The direction of relationship between insight and psychopathology has also been studied(Sulekha VK, 2009). That better insight lowered psychopathology has been supported by a four-week longitudinal study on insight and psychopathology by Mehrotra et al (Mehrotra and Sengupta, 2006) The reverse direction of the relationship between insight and psychopathology has been supported by the study done in Vellore, by Johnson et al., (2012)

who argued that many of the studies that conclude the contrary fail to account for the illness characteristics that influence outcome(Johnson et al., 2012a). Their data suggested

that psychopathology and illness characteristics predict insight, explanatory models and outcome in schizophrenia. They further argue that insight maybe secondary to psychopathology. They describe insight as a coping mechanism rather than being causally related to the outcome.

Studies that assess the relationship of insight with psychopathology and neurocognition find that insight is partly explained by them. This may be just a reflection of the complexity of the phenomenon of psychosis(Arango and Amador, 2010).

Personality traits and insight

What is the relationship between insight and personality? Studies have been done in this area as well. In one of the recent publication it has been shown that Premorbid personality traits may help to identify patients who are at high risk for having lack of insight (Campos et al., 2011).

Insight and course of schizophrenia

The presence of insight is known to prevent relapse of the psychotic symptoms as evidenced by a study done in Vellore (SobhaLakshmi B, 2006)

Attitude to medication in patients with schizophrenia

Attitude refers to the patient's perception towards different aspects of medications including medication intake, medication effects and/ or medication side effects.

The development of effective antipsychotic drugs and the changes in the attitude towards medication have changed the pattern of hospitalizations for patients with Schizophrenia (Sadock & Sadock, 2007) The attitude of the patient towards treatment with antipsychotics determines the compliance towards medication.

The predictors of attitude towards treatment include patient's response to the antipsychotic medication, side effects of medicines, illness duration, insight, patients' relationship with staff and patients perception about admission as reported by studies done independently by Day et al., (2004) and Hofer et al., (2005).

An association between positive attitudes towards medication, level of psychopathology, functioning and medication compliance is found, independent of insight.

Educational interventions that affect these attitudes may be an important part of psychosocial rehabilitation and/or recovery-oriented services. There is a need for a study that will measure the relationship between insight and attitude to medication in the Indian context.

A mediational model describes best the relationship between insight and attitude towards medication.

Awareness of illness contributed to medication adherence via patients' perceived necessity of antipsychotics. The model reveals a direct negative relationship between concerns regarding antipsychotics and adherence and an indirect negative effect of a general distrust regarding pharmacotherapy and adherence via antipsychotic specific attitudes. Interventions to enhance medication adherence may be more effective if they focus on treatment related attitudes rather than on global insight into illness. Clinicians may not only enhance the patients' perceived necessity of antipsychotic treatment but also explore and address concerns and the patients' distrust in pharmacotherapy in a more personalized way.

The Health Belief Model states that medication adherence is primarily determined by beliefs i.e., perceptions of adherence costs and benefits, susceptibility, and outcome severity. Study done among patients in the early episode of schizophrenia support this and emphasise the role of attitudes toward medication as a predictor of adherence (Baloush-Kleinman et al., 2011).

Measurement of attitude to medication

Presence or the absence of Insight and an unfavourable attitude towards medication are the two significant variables that have repeatedly been shown to be risk factors for non adherence (Yang et al., 2012).

Drug attitude inventory (DAI-30) is a tool to predict poor adherence in first-episode schizophrenia. A study compared the short version (DAI-10) with DAI-30 in long-term schizophrenia. They conclude that DAI is a useful self-report instrument to assess a unique clinical dimension relevant to non-adherence. DAI-10 might be preferred for its simplicity and good psychometric properties (Nielsen et al., 2012)

Compliance with medication and factors affecting compliance in Schizophrenia

Compliance is the ability of the individual to follow health related advice, to take medication as prescribed, to attend scheduled appointment, and to complete recommended investigations. Although the psychotropic drugs are effective in treating the mentally ill, it is also a well-documented fact that compliance among the patients with psychiatric disorders is poor. A review of literature by Lacro et al., states that non-compliance to prescribed antipsychotic medication among schizophrenic patients is 41.2%(Lacro et al., 2002) In India, the rate of noncompliance with antipsychotic was estimated to be 38.7% (Baby, Gupta and Sagar, 2009).

One of the major factors for hospitalization is found to be this noncompliance with psychotropic drugs . Non adherent patients are 3.7 times more likely to relapse than patients who take psychotropic medications as prescribed (Fenton et al., 1997) . Reviews have suggested that overall rates of partial medication adherence ranges from 41%-55%(Lacro et al., 2002).

Antipsychotics have become the mainstay of treatment for schizophrenia and the maintenance of antipsychotic treatment has been shown to play a vital role in relapse prevention(Agostini JV, 2007).

And despite advances in pharmacological approaches to therapy, the goal of long term success in the treatment of patients remains a significant challenge (Kane, 1999).

Poor adherence to psychotropics undermines the possibility of effective drug treatment in psychiatric disorders. So medication compliance is one of the most difficult challenges in the management of schizophrenia. According to Cooper, (2007) the reasons for not taking medications as prescribed were forgetting, losing, running out, thinking medication is unnecessary, reluctance to take drugs and development of side effects(Cooper et al., 2007). Other reasons for noncompliance could be violence, greater substance use, complexity of the prescription, patient's clinical features and relapses(Llorca et al., 2005)(Ascher-Svanum et al., 2006)

In developing countries like India the main reason for non-compliance may be affordability of medication, especially among the poor patients. For them at times it may be difficult to decide which is more important, food or medicines. The accessibility to medical care, the cost of travel to reach the treatment facility may at times be the reason for stopping medication even when the medicines are provided free (Prakash, 2007). Non compliance affects the course of illness, occupation, social skills and interpersonal relationships, eventually resulting in poor quality of life(Amador, 2006). So it is evident that functional level of the individual is affected due to noncompliance.

Studies on the variables affecting medication non-adherence have found that medication non-adherence along with medication related side effects are contributory. The correlation between awareness of mental illness and adherence with medication was highly significant in the study by Trauer and Sacks (2000). The lack of insight was an important cause of discontinuation(Fenton et al., 1997) . Lacro et al , (2002) reported that 10 out of 14 studies that examined awareness of illness and medication non-adherence in patients with schizophrenia reported that awareness of illness are strongly correlated (Lacro et al., 2002).

Even with antipsychotic medication, however the probability of readmission within two years after discharge from the first hospitalization is about 0% to 60% (Sadock & Sadock, 2007). Following discontinuation of medications, the relapse rate is about 80% within two years(National Institute of Mental Health, 2007). In schizophrenia, more than half of the patients have been noncompliant, leading to relapse, rehospitalization or poor outcome leading to high costs(Perkins, 2002).

Compliance with antipsychotics is essential to prevent relapse and this compliance is influenced by several factors including attitude towards treatment(Löffler et al., 2003), side effects of the drugs (Khalkho and Khess, 1999) and their perceived benefit of medication(Fujikawa et al., 2008) .

Antipsychotics have been associated with a wide range of side effects such as anticholinergic, extrapyramidal, hormonal and cardiovascular symptoms. Amador (2006) explains that nearly 60% of the patients with schizophrenia will be unaware of being ill.

This symptom predisposes the individual to non-compliance to treatment and increases the number of hospital readmission. Therefore these factors should be considered while health educating the patient on compliance.

Lack of insight and a nonfavorable attitude to medication have been shown to be the two important factors contributing to treatment non-compliance(Freudenreich and Cather, 2012) along with medication related side effects. Another reason for nonadherence in patients with schizophrenia who lack insight is loss of decision-making capacity. It is extremely difficult to decide for themselves whether to take medicines for their mental condition and they cannot decide whether or not to use it (Fortinash, 2008). Hence, it is very important to know how much insight is affecting the life of an individual with schizophrenia.

Along with a good therapeutic relationship and a non-judgmental approach, the realization that compliance requires constant effort is also needed for ensuring treatment adherence. (Goff et al., 2010).

Insight and Medication Adherence:

Cross-sectional studies of the relationship between insight and adherence to treatment have reported that increased insight was associated with greater treatment adherence. However, studies that examined the predictive power of insight and future treatment adherence have yielded mixed results with some studies finding no association while one

smaller study reported only a positive trend. Studies that investigated the association between change in insight and change in medication adherence over time are very few.

Kampmon (2002) conducted a study to explore the indicators of compliance among first episode psychosis patients. The data was collected from the patients and also from the chart during the first three months following discharge(Kampman et al., 2002). The findings showed that non compliance was due to harmful side effects, male sex, lack of social activities, low score on PANSS positive symptoms, high score on PANSS total score and young age. They concluded that insight and attitudes towards treatment are the important determinants of compliance during the acute phase of psychosis. Adherence to medication is influenced by a variety of factors. These factors range from patient's concerns about the immediate positive consequences of medication intake, the wish to avoid negative consequences like relapse leading to re-hospitalisation and the attitude of significant others towards treatment.

It is suggested that treatment strategies addressing adherence enhancement in schizophrenia may profit by considering both the patient's subjective adherence attitude profile as well as the specific pattern of risk factors for noncompliance including depression, lack of insight, negative syndrome, cognitive disorganization and socio-demographic factors, which are differentially associated with each adherence attitude profile(Beck et al., 2011).

Measurement of Adherence

Schizophrenic patients' self-reports of their experience of neuroleptic treatment were used as the basis for the construction of a scale predictive of drug compliance. Reliability analysis of the responses of 150 patients indicated high internal consistency in the 30-item scale, and preliminary validation in the form of discriminant classification accurately assigned 89% of the sample to compliant and non-compliant groupings. Both discriminant and factor analyses suggest that maximum variability in responding is accounted for by items reflecting how the patient feels on medication, rather than what he knows or believes about medication.(Hogan et al., 1983)

Adherence to medication among patients with Schizophrenia can be monitored by a variety of methods ranging between patient self-reports, clinician rating scales, pill count and the Medication Event Monitoring System. With regards to the relationship between attitude to medication and adherence, the study by Yang et al (2012),found that DAI score was higher in adherent patients when compared with the non adherent patients(Yang et al., 2012). The severity of the symptoms as measured by PANSS to were found to affect the adherence to medication.

Insight and Psychoeducation

Psychoeducation decreases relapse, readmission, encourages treatment compliance , and reduce the length of hospital stay. Psychoeducation is cost effective and clinically beneficial (Xia et al., 1996).

The effect of psychoeducation on insight has been found to be a positive one with an increase in the level of insight among patients who received intervention. This improvement further led to better adherence to medication and an overall better outcome(Rathod et al., 2005)

Rationale for the Study

Schizophrenia is a heterogeneous condition with variable outcome. Many factors affect the treatment and prognosis of patients with schizophrenia. Some of these factors of clinical relevance are insight, psychopathology, attitude to medication and medication adherence. These are also potential areas of change with treatment. This study was an attempt to measure these four components and to determine the factors associated with each of them in patients with chronic schizophrenia. The second objective was to assess the correlation of these factors with each other.

AIMS AND OBJECTIVES

Primary Objectives and aims of study

1. To assess the level of insight and attitude towards medication in patients with chronic Schizophrenia.
2. To determine factors associated with insight and attitude to medication in patients with schizophrenia.
3. To determine the relationship between insight and attitude to medication in this group of patients with schizophrenia.

Secondary objectives and aims of study

1. To assess the level of associated factors like psychopathology and compliance with medication in patients with chronic Schizophrenia.
2. To determine the relationship between psychopathology, insight, attitude to medication and compliance with medication in this group of patients with schizophrenia.

METHODOLOGY AND MEASURES

This chapter deals with research design, setting of the study, population, sample size, sampling method and criteria, data collection procedure, instruments and ethical issues.

Research design:

Cross sectional study design was employed to determine the relationship of insight, psychopathology, attitude to medication and medication adherence in schizophrenia.

Setting of the study:

This study was conducted in the Department of Psychiatry, Christian Medical College (CMC), Vellore, a tertiary care psychiatric facility. There are three adult psychiatric units and one child and adolescent psychiatric unit. The inpatient setting consists of 122 beds. The out patient services for new cases are available from Monday to Saturday in the morning, while old patients are reviewed four days a week from Monday to Thursday. About 350-400 old patients attend outpatient services for review on a regular basis. Among them approximately 50-60% of patients have a diagnosis of schizophrenia.

Population:

The study population consists of patients diagnosed with schizophrenia (according to ICD-10 criteria) attending the outpatient services at the Department of Psychiatry, CMC, Vellore.

Sample:

101 patients who fulfilled the inclusion and exclusion criteria were recruited from the outpatients attending the Department of Psychiatry, CMC, Vellore.

Sample size estimation:

The sample size was calculated using the formula of one sample proportion, by keeping the prevalence of insight in schizophrenia as 50% and the precision as 10% with 5% alpha error and 80% of priori power. It was calculated as 100 subjects with schizophrenia. (Saravanan et al., 2007)

Sampling technique:

The investigator used consecutive sampling technique. From patients attending outpatient services for review all who fulfilled the eligibility criteria were assessed for possible recruitment in this study.

Criteria for sample selection:***Inclusion Criteria:***

- ICD-10 diagnosis of Schizophrenia :duration 2yrs and above
- Age above 18 years
- Patients who are fit to give an informed consent.
- Subjects who speak Tamil or English

Exclusion Criteria:

- Patients with severe language, hearing or cognitive impairment or patients having difficulty to give informed consent.
- Subjects with a primary mood disorder or organic disorder.

Description of the instruments

Part 1: Socio demographic variables and clinical variables. (Appendix No.2)

This part had two sections.

Section A: Socio-demographic variables: This comprises of age, sex, educational status, years of education, marital status, religion, residence, employment and socioeconomic status.

Section B: Clinical data such as subtype of schizophrenia, duration of illness, course of illness, age at onset of illness, age at first contact, medical comorbidity, comorbid substance use , score on PANSS (Positive and Negative Symptom Scale) and family history of mental illness.

PANSS Scale: (Appendix No.4)

Positive And Negative Symptom Scale, developed by Kay et al, comprises of 30 items is a freely available and standardized scale that is specifically developed to assess the psychopathology in patients with schizophrenia.(Kay, Oper & Linden Mayer, 1988). It has three subscales-

Positive subscale consisting of 7 symptoms

Negative subscale consisting of 7 symptoms

General psychopathology subscale consisting of 16 symptoms.

Each item is individually scored as 1-7 depending upon the severity:

1= Absent

2=Minimal; it denotes questionable, subtle or suspected pathology or extreme end of the normal range.

3= Mild, indicative of symptom whose presence is clearly established but not pronounced and interferes little in day to day functioning.

4= Moderate , characterizes a symptom which though representing a serious problem, either occurs only occasionally or intrudes on daily life only to a moderate extent.

5= Moderately severe, indicates marked manifestations that distinctly impact on one's functioning but are not all consuming and usually can be contained at will.

6= Severe, represents gross pathology that is present very frequently, proves highly disruptive to one's life, and often calls for direct supervision.

7 =Extreme, refers to the most severe level of psychopathology, whereby the manifestations drastically interfere in most or all major life functions, typically necessitating close supervision and assistance in many areas.

Scoring and interpretation

The total items in this scale are 30. The range of possible score is 30-210. The scoring was done on the basis of absence or presence of symptoms in patients.

The PANSS scale was tested for its validity and reliability. Cronbach's score reported in the literature for this scale was 0.80, which showed a good internal consistency.

The scores are interpreted as follows:

| | |
|---------------|---------------------|
| 30 | Absence of symptoms |
| 31-74 | Mildly ill |
| 75-119 | Moderately ill |
| 120-164 | Markedly ill |
| 164 and above | Severely ill |

Part 2: Assessment of attitude

Attitude to medication to be assessed using Drug Attitude Inventory (DAI)

Drug Attitude Inventory (DAI) scale: (Appendix No.6)

DAI -10 is a 10 item scale to assess how the attitude of schizophrenia patients towards their medication may affect compliance (Hogan, Awad and Esatwood, 1983). The scale has been shown to have test- retest reliability, high internal consistency and discriminant, predictive and concurrent validity. This self report scale has ten items that the patient scores as True or False. For six of the items (1,3,4,7,9 and 10), a True response is considered positive, whereas for the other four items (2,5,6 and 8), a False response is considered positive. A positive answer is scored as +1 and a negative answer as -1. The final score is the sum of the ten scores.

Interpretation of DAI score:

Positive score - Positive subjective response (favourable attitude)

Negative score- Negative subjective response (unfavourable attitude)

Part 3: Assessment of insight

Schedule for Assessment of Insight: Expanded Version (SAI-E) (Appendix No.7)

The expanded version of the Schedule for Assessment of Insight has been applied widely in Western and non Western countries for the assessment of insight.(Kemp, R. and David, A., 1997)

It comprises questions to assess three dimensions of insight: awareness, relabeling of symptoms and adherence, plus labeling a hypothetical contradiction item added to evaluate the person's capacity to consider other's perspective. Each dimension comprises two or three questions which are scored on a 3 point scale from 0 (no insight) to 2 (good insight). The supplementary question is scored from 0-4 and this is added to the total score. This expanded version also includes items on awareness of change, difficulties resulting from the psychiatric condition and insight into key symptoms (Kemp and David, 1997). The maximum score is 35.

The scores are interpreted as follows:

| | |
|------------------|------------|
| Poor insight | < 15 |
| Moderate insight | 15.1- 24.9 |
| Good insight | >25 |

Validity and reliability

The SAI-E has been demonstrated to have high concurrent validity with other measures of insight, namely the insight question of the PANSS ($r= 0.895$), the Insight and Treatment Attitude Questionnaire ($r=0.845$) and the Schedule for the Assessment of Insight (SAI) ($r= 0.977$)

Part 4: Assessment of compliance:

Compliance to be assessed with **Morisky scale** and by **chart review**.

MORISKY SCALE: (Appendix No.5)

It was developed by Morisky, Gree and Levine in 1986(Morisky et al., 2008) and contains four yes or no type questions. Each answer indicating compliance was given a score of 0 and each answer indicating noncompliance was given a score of 1. Concurrent and predictive validity of a structured four item self-reported adherence measure (alpha reliability =0.61).

Interpretation:

Interpretation:

Score 1 point for every YES answer

0 points = high adherence

1-2 points = intermediate

3-4 points = low adherence

All those who had a total score of 0 are considered compliant while those with a score of 1 or more are considered non compliant.

Chart review for compliance:

Question 1. Has the patient been compliant with medication over the past one year?

Question 2. Has the patient been compliant with medication throughout his or her illness?

Scoring: '1' mark was given for compliance and '0' mark for non-compliance.

Statistical methods:

We used descriptive statistics to describe continuous variables and frequency distributions for categorical variables. Descriptive statistics was employed to assess the socio-demographic variables, clinical variables, compliance, psychopathology, insight and attitude. Frequencies were calculated for the categorical variables and means as well as the standard deviations were calculated for the continuous variables. Chi-square test for association was used to determine the association of compliance with the selected socio-demographic and clinical variables. Data were analyzed with SPSS 17.0.

Protection of human rights:

The Institutional Review Board of the Christian Medical College, Vellore, approved the study protocols. The investigator explained the purpose of the study and information leaflets (Appendix No.1) were also issued to them. Informed consent (Appendix No.3) was obtained from all subjects and their caregivers. The confidentiality and the autonomy of the subjects were respected.

RESULTS

I. Demographic details of study sample

The sample comprised of forty men (39.6 percent) and sixty one (60.4 percent) women with chronic schizophrenia (Figure 1).

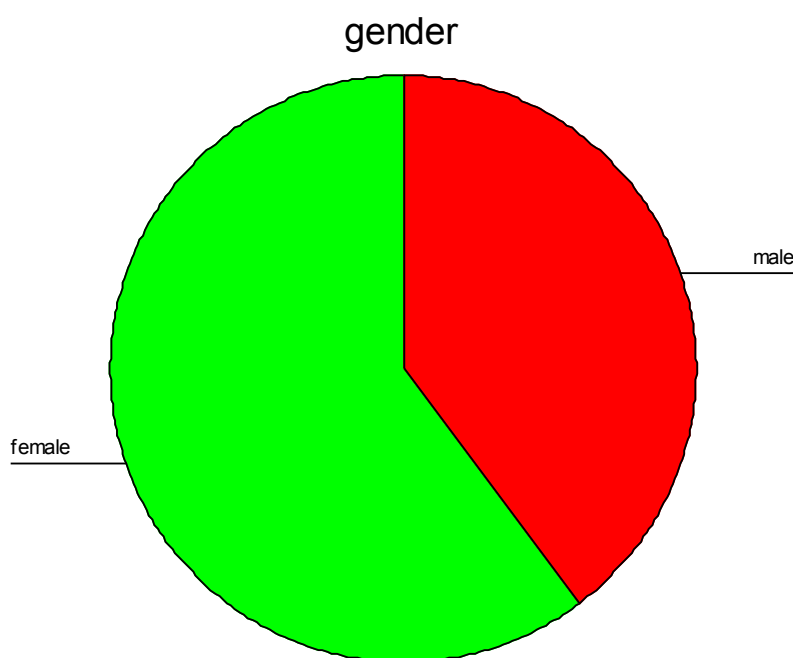


Figure 1: Sex distribution of study participants

The mean age of the study sample was 35.1 years (SD: 8.8 years). The mean age of women was 36.3 (SD: 8.8 years) and the mean age for men was 33.3 years (SD: 8.6 years). Majority were in the age group of 30 years to 39 years, followed by age group, less

than 30 years, followed by age group 40 years to 49 years. Least representation was from the older age group, 50 years and above. The age distribution is given in Table 1.

Table 1: Details of age distribution of participants

| Age group | Men N (%) | Women N (%) | Total N (%) |
|-------------------|----------------------|------------------------|------------------------|
| ≤ 29 years | 15 (37.5) | 15 (24.6) | 30 (29.7) |
| 30years - 39years | 18 (45.0) | 21 (34.4) | 39 (38.6) |
| 40years - 49years | 4 (10.0) | 19 (31.1) | 23 (22.8) |
| 50years - 59years | 3 (7.5) | 6 (9.8) | 9 (8.9) |
| Total | 40 (100.0) | 61 (100.0) | 101 (100.0) |

Sixty nine percent of the participants were from rural area whereas the rest from urban area (Figure 2). Among men, seventy five percent were from rural area in comparison to sixty five percent among women.

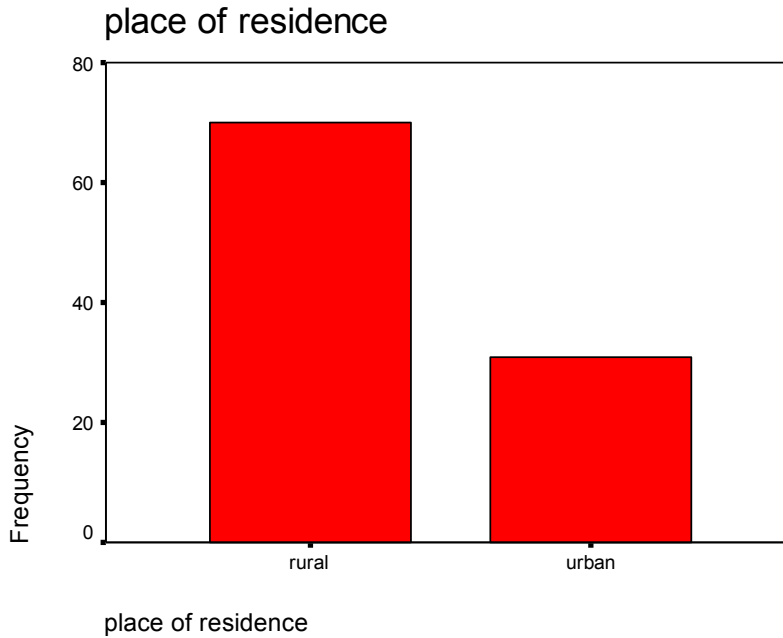


Figure 2: Place of residence of study sample

Majority of participants were married (sixty percent). A significant proportion of the study sample were still unmarried, thirty one percent. There were no widow/widower in the sample. Nine percent were either separated or divorced. There was significant gender difference in the marital status. Sixty five percent of men were unmarried whereas eighty four percent of women were married. The details are given in Table 2.

Table 2: Marital status of sample

| Marital status | Men N (%) | Women N (%) | Total N (%) |
|-----------------------|----------------------|------------------------|------------------------|
| Single | 26 (65.0) | 6 (9.8) | 32 (31.7) |
| Married | 9 (22.5) | 51 (83.6) | 60 (59.4) |
| Separated/Divorced | 5 (12.5) | 4 (6.6) | 9 (8.9) |
| Widow | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Total | 40 (100.0) | 61 (100.0) | 101 (100.0) |

More than three quarter (eighty five percent) were followers of Hindu religion. Eleven percent were Christians and the rest (four percent) were Muslims. There was no major gender difference in religious faith of study sample.

Table 3: Religious faith of study participants

| Religion | Men N (%) | Women N (%) | Total N (%) |
|-----------------|----------------------|------------------------|------------------------|
| Hindu | 34 (85.0) | 52 (85.2) | 86 (85.1) |
| Christian | 4 (10.0) | 7 (11.5) | 11 (10.9) |
| Muslim | 2 (5.0) | 2 (3.3) | 4 (4.0) |
| Total | 40 (100.0) | 61 (100.0) | 101 (100.0) |

II. Socio economic details of study sample

Nine percent of the study sample was illiterate. Three fourth of the sample had high school or above educational status of which four percent had professional education and sixteen percent had graduate/postgraduate education. Overall, men had slightly higher level of education in comparison to women. The percentage of illiterate women was twice that of men (Table 4).

Table 4. Educational status of study participants

| Religion | Men N (%) | Women N (%) | Total N (%) |
|-----------------------|----------------------|------------------------|------------------------|
| Professional | 3 (7.5) | 1 (1.6) | 4 (4.0) |
| Postgraduate/Graduate | 10 (25.0) | 6 (9.8) | 16 (15.8) |
| Diploma | 11 (27.5) | 10 (16.4) | 21 (20.8) |
| High school | 10 (25.0) | 27 (44.3) | 37 (36.6) |
| Middle school | 3 (7.5) | 8 (13.1) | 11 (10.9) |
| Primary school | 1 (2.5) | 2 (3.3) | 3 (3.0) |
| Illiterate | 2 (5.0) | 7 (11.5) | 9 (8.9) |
| Total | 40 (100.0) | 61 (100.0) | 101 (100.0) |

Sixty percent (N=61/101) of the study sample were unemployed. The proportion of unemployed men was 30 percent (N=12/40) in contrast to eighty percent (N=49/61) of unemployed women (Figure 3.4).

Figure 3: Employment status of men

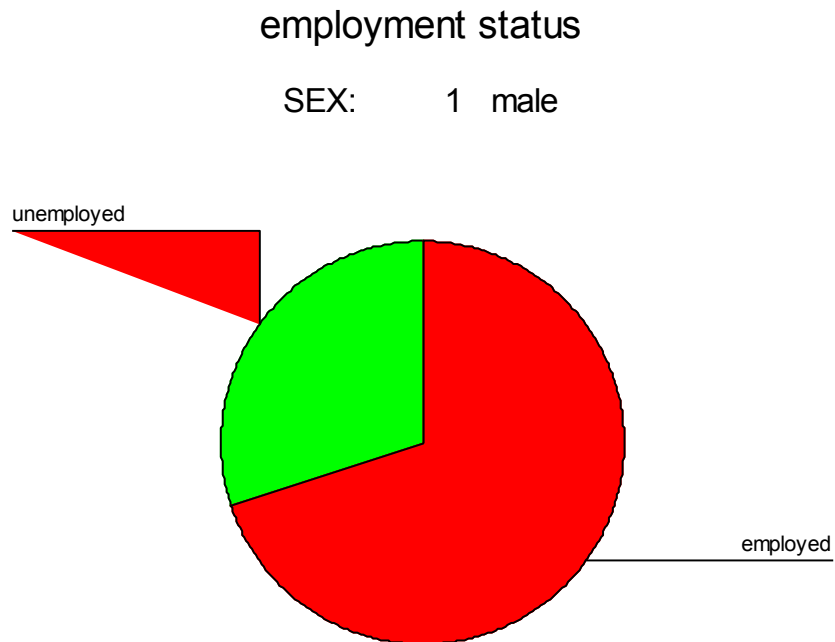
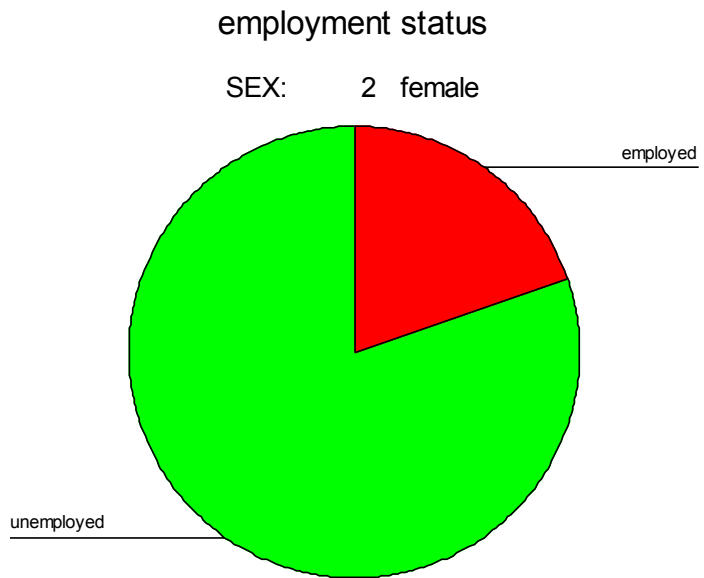


Figure 3: Employment status of women



Further, occupation of the participants was analysed. The details of the occupation of study participants are given in Table 5.

Table 5: Occupation of study participants

| Occupation | Men N (%) | Women N (%) | Total N (%) |
|---------------------------------|----------------------|------------------------|------------------------|
| Professional | 0 (0.0) | 1 (1.6) | 1 (1.0) |
| Semiprofessional | 0 (0.0) | 1 (1.6) | 1 (1.0) |
| Clerical/ Shop owner/ Farmer | 10 (25.0) | 2 (3.3) | 10 (9.9) |
| Skilled worker | 3 (7.5) | 0 (0.0) | 3 (3.0) |
| Semiskilled worker | 8 (20.0) | 0 (0.0) | 8 (7.9) |
| Unskilled worker | 7 (17.5) | 10 (16.4) | 17 (16.8) |
| Unemployed | 12 (30.0) | 49 (80.3) | 61 (60.4) |
| Total | 40 (100.0) | 61 (100.0) | 101 (100.0) |

Using Kuppusamy scale, the socioeconomic status of the study participants was assessed. Half of the participants (fifty five percent) belonged to lower socioeconomic strata and nearly the same proportion (forty seven percent) was in the middle socioeconomic strata. Only one participant was from the upper socioeconomic strata.

Table 6: Socioeconomic strata of study participants

| Socioeconomic status | Men | Women | Total |
|-----------------------------|-------------------|-------------------|--------------------|
| | N (%) | N (%) | N (%) |
| Upper | 0 (0.0) | 1 (1.6) | 1 (1.0) |
| Middle | 20 (50.0) | 28 (45.9) | 48 (47.5) |
| Lower | 20 (50.0) | 32 (52.5) | 52 (51.5) |
| Total | 40 (100.0) | 61 (100.0) | 101 (100.0) |

TABLE 1b: Clinical Variables

| VARIABLES | | N (%) |
|----------------------|---------------|----------|
| AGE | <=35 | 72(71.3) |
| | >=35 | 29(28.7) |
| GENDER | MALE | 40(30.6) |
| | FEMALE | 61(60.4) |
| FAMILY HISTORY | SCHIZOPHRENIA | 18(17.8) |
| | MOOD DISORDER | 22(21.8) |
| | AND OTHERS | |
| | NIL | 61(60.4) |
| MEDICAL CO MORBIDITY | DIABETES | 14(14.9) |
| | DYSLIPIDEMIA | |
| | HYPERTENSION/ | 1(1) |
| | CAD | |

| | | |
|--------------------|---------------|-----------|
| | OTHERS | 6(5.9) |
| | NIL | 80(79.2) |
| SUBSTANCE USE | ALCOHOL | 3(3) |
| | TOBACCO | 5(5) |
| | NIL | 93(92.1) |
| COURSE | CONTINUOUS | 86 (85.1) |
| | EPISODI | 15(14.9) |
| PANSS SEVERITY | MILD | 88 (87.9) |
| | MODERATE | 13 (12.9) |
| INSIGHT | MODERATE | 43 (42.6) |
| | GOOD | 58 (57.4) |
| MORISKY | COMPLIANT | 32 (31.7) |
| | NON COMPLIANT | 69 (68.3) |
| COMPLIANCE RATE | COMPLIANT | 68(67.3) |
| | NON COMPLIANT | 33(32.7) |
| | | |

| | | |
|-----|-------------------|--------|
| DAI | FAVOURABLE | 96(95) |
| | NOT FAVOURABLE | 5(5) |

Table 1b: Clinical variables:

Table 1b gives the details related to family history, medical co morbidity, substance use, course of the illness, PANSS scores, SAI-E scores, DAI scores, and compliance scores. Majority of the patients, 60% had their age less than 35 years and the remaining 40 % had their age above 35 years. Majority of the patients 86(85.1%), had a continuous course of illness and the remaining had an episodic course. Regarding the medical co morbidity obtained from the chart 14(14.9 %) had history of diabetes or dyslipidaemia, 1(1%) had hypertension, 6(5.9 %) had other medical disorders and 80(79.2%)of the patients did not have any medical comorbidity.

92% of the study population did not admit to any substance use. 5% of the group of patients with schizophrenia were using tobacco and 3% were using alcohol. 18% of the population had family history of schizophrenia, 2 % had family history of Mood disorder 20 % had other psychiatric disorders. Majority, 60% had no family history of any psychiatric disorder.

The PANSS scale assessed the severity of psychopathology. For the majority (87%) of the sample, total score was between 31 to 74 and was included in the mild category and for

13% of the sample the score was between 75 to 119 and were categorized as having moderate level of psychopathology. None of the study group had scores above 119, included in markedly ill or severely ill category.

Assessment of insight by SAI- E scale revealed that 57 % of the patients had good insight and 43 % had moderate insight. As per the Drug Attitude Inventory 96 (95%) had a favourable attitude and 5(5%) had a not favourable attitude towards medication. Compliance as assessed by the Morisky scale showed that 32 % were compliant and 68 % were non compliant. However when the compliance was assessed by the chart review it was seen that only 33% were noncompliant and that the majority 67% was compliant.

Table 2. Descriptive statistics

| Variable | N | Mean | Std. Deviation |
|--------------------|-----|-------|----------------|
| Age in years | 101 | 35.11 | 8.796 |
| Years of education | 101 | 9.77 | 4.694 |
| PANSS Positive | 101 | 11.51 | 5.128 |
| PANSS Negative | 101 | 17.12 | 4.670 |
| PANSS General | 101 | 29.40 | 7.2 |
| PANSS Total | 101 | 58.04 | 13.7 |
| SAI E | 101 | 25.02 | 4.366 |

| | | | |
|-----------------------|-----|-------|--------|
| DUP | 62 | 18.05 | 32.256 |
| Age at onset in years | 101 | 26.23 | 7.904 |

Table 2 Descriptive statistics

Distribution writing Results

The mean age of the sample was 35 years and the standard deviation was 8.796.

The mean years of education was 9.8 years and the SD 4.69.

The mean PANSS positive score was 11.5 and the SD 5.12

The mean PANSS negative score was 17.12 and the SD 4.67

The mean PANSS general score was 29.40 and the SD 7.2

The mean PANSS total score was 58.04 and the SD 13.7

The mean SAI E score was 25.2 and the SD 4.36

The mean duration of untreated psychosis was 18 months and SD 32.2

The mean age at onset was 26 years and the SD 7.9.

Table 1. Details of natural history of schizophrenia

| Details of schizophrenia | N | Mean | SD |
|---------------------------------|----------|-------------|------------|
| Age of onset | 101 | 26.2 years | 7.9 years |
| Duration of untreated psychosis | 62 | 18 months | 3.2 months |
| Duration of schizophrenia | 101 | 8.9 years | 6.2 years |

Table 2. Gender difference in age of onset of schizophrenia

| Details of schizophrenia | Men (SD) | Women (SD) |
|---------------------------------|---------------------------|---------------------------|
| Age of onset of schizophrenia | 23.8 years (5.8 years) | 27.8 years (8.7 years) |

Table 3. PANSS score of study sample

| Details of schizophrenia | Men (Median) | Women (Median) | Total score (Median) |
|--|-------------------------|---------------------------|---------------------------------|
| PANSS positive score | 10 | 9 | 10 |
| PANSS negative score | 18 | 16 | 17 |
| PANSS general psychopathology score | 29 | 29 | 29 |
| PANSS total score | 59 | 55 | 56 |
| Total sample | N=40 | N=61 | N=101 |

Figure 1. Insight in patients with schizophrenia assessment by SAI-E

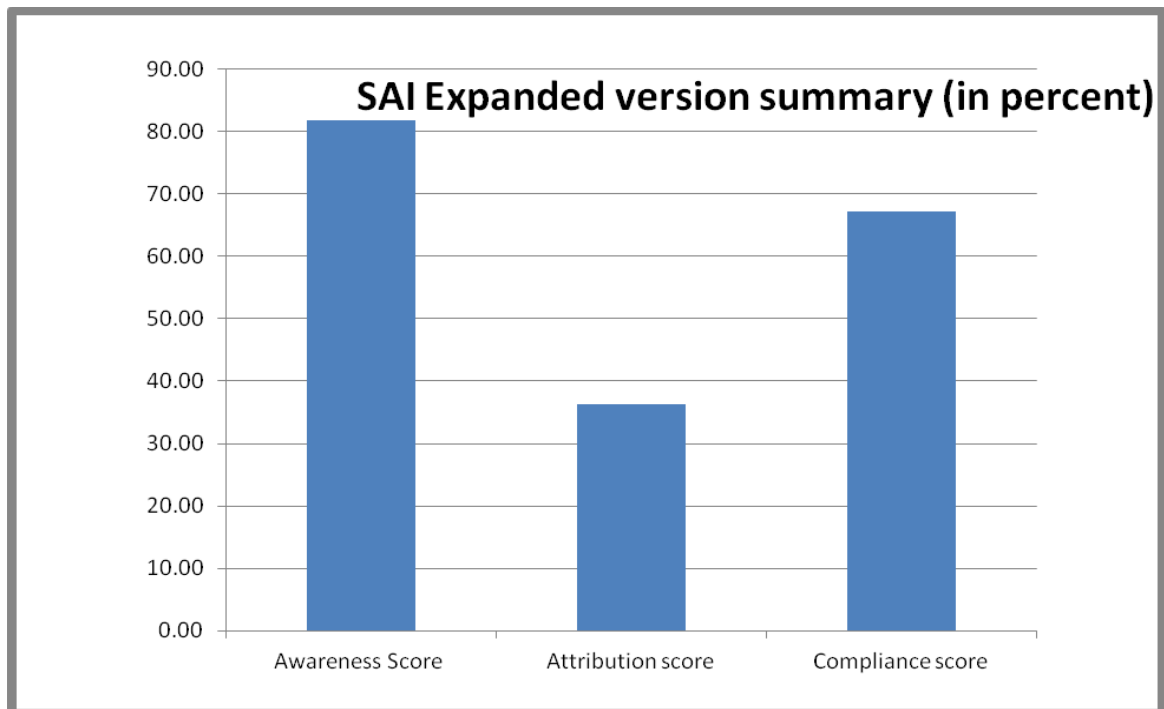


Figure 1. Insight in patients with schizophrenia assessment by SAI-E

This graph summarizes the findings from the administration of the Schedule for Assessment of Insight – Expanded version (SAI -E) to this study population of patients with schizophrenia.

The schedule for assessment of insight expanded version assesses mainly three dimensions of insight. The awareness of the patient about the changes in him or her the attribution of these changes and the actions subsequent to it. The first seven questions in the schedule assess the awareness, the next two questions the attribution and the last three the action. This graph shows the percentage of the scores the patients of this study population scored in these different dimensions. In the dimension of awareness the patients of this study population scored 80% of the maximum score possible. And the score in the dimension of attribution was 36 % of the maximum score possible, in this study population. In the dimension of action, the patients of this study population scored 67 % of the maximum score.

TABLE 3a: Association between Socio demographic variables and Psychopathology and Insight.

| SOCIODEMOGRAPHIC VARIABLES | | ASSESSMENT TOOLS | | | | | |
|-------------------------------|------------------|------------------|--------------------|------------|--------------------|-----------------|------------|
| | | PANSS | | | SAI-E | | |
| | | Mild(n=88) | Moderat e(n=13) | P value | Moderat e(n=43) | Good(n= 58)) | P value |
| AGE(Years) | <=35(n=61) | 51(83.6%) | 10(16.4 %) | 0.192 | 30(49.2 %) | 31(28.4 %) | 0.097 |
| | >35(n=40) | 37(92.5%) | 3(7.5%) | | 13(32.5 %) | 27(67.5 %) | |
| Gender | Male(n=40) | 34(85.0%) | 6(15.0%) | 0.605 | 16(40.0 %) | 24(60.0 %) | 0.672 |
| Employment status | Employed(n=40) | 35(87.5%) | 5(12.5%) | 0.928 | 19(47.5 %) | 21(52.5 %) | 0.418 |
| | Unemployed(n=61) | 53(86.9%) | 8(13.1%) | | 24(39.3 %) | 37(60.7 %) | |
| | | | | | | | |

| | | | | | | | |
|----------------------|--------------|-----------|----------|-------|-----------|-----------|-------|
| Socio-Economic Class | Upper(n=1) | 1(100%) | 0(0%) | 0.705 | 0(0%) | 1(100%) | 0.232 |
| | Middle(n=48) | 43(89.6%) | 5(10.4%) | | 17(35.4%) | 31(64.6%) | |
| | Lower(n=52) | 44(84.6%) | 8(15.4%) | | 26(50%) | 26(50%) | |
| Residence | Rural(n=70) | 62(88.6%) | 8(11.4%) | 0.515 | 30(42.9%) | 40(57.1%) | 0.931 |
| | Urban(n=31) | 26(83.9%) | 5(16.1%) | | 13(41.9%) | 18(58.1%) | |
| Marital status | Single(n=32) | 25(78.1%) | 7(21.9%) | 0.130 | 13(40.6%) | 19(59.4%) | 0.309 |

TABLE 3a: Association between Socio demographic variables and Psychopathology and Insight.

Positive and negative syndrome scale (PANSS) for schizophrenia and socio demographic variables

Age: In this study population of patients with schizophrenia in those aged 35 or below the patients with mild severity of psychopathology as per PANSS were 51 (83.6%) and those with moderate psychopathology were 10 (16.4%). In this study population of patients with schizophrenia in those aged 35 or above the patients with mild severity of psychopathology as per PANSS were 37 (92.5%) and those with moderate psychopathology were 3 (7.5%).

Gender: In the men of this study population of patients with schizophrenia 34 (85%) had mild severity of illness in the PANSS scale and 6(15%) had moderate severity. In the women of this study population 54(88.5%) had mild severity of illness in the PANSS scale and 7 (11.5%) had moderate severity. P value 0.605

Employment : In this study population of patients with schizophrenia the severity of psychopathology as assessed by the PANSS was mild in 35(87.5%) and moderate in 5(12.5%) of the employed. In the unemployed, the mild severity was seen in 53 (86.9%) and moderate severity in 8 (13.1%). P value: 0.928

Socioeconomic class: In this population of patients with schizophrenia the association of severity of psychopathology was mild in 1 (100%) and moderate in 0(0%) of the upper class. In the middle class 43 (89.6%) had mild severity and 5(10.4%) had moderate

severity. In the lower class 44(84.6%) had mild severity and 8(15.4%) had moderate severity. P value: 0.705

Residence: In this study population of patients with schizophrenia , among those residing in rural areas and in 62(88.6%) had mild severity and 8(11.4%) had moderate severity. 26(83.9%) of those residing in the urban areas had mild severity and 5(16.1) of them had moderate severity.

P value: 0.515

Marital :In this population of patients with schizophrenia among the single, 25(78.1%) had mild severity and 7 (21.9%) had moderate severity of psychopathology. In the married 54 (90.0) had mild severity , and 6 (10%) had moderate severity of psychopathology. Mild psychopathology was seen in 9(100%) of the divorced/separated whereas, none of them had moderate level of psychopathology.

P value:0.130

Schedule for assessment of insight – expanded version (SAI-10) and sociodemographic variables:

Age: In this study population of patients with schizophrenia assessment of insight by SAI- E scale revealed that in those aged 35 or below, 30(49.2%) had moderate insight and 31 (28.4%) had good insight. In those aged above 35 years 13(32.5%) had moderate insight and 27(67.5%) had good insight. P value:0.097

Gender:

Of the male patients of this study population 16 (40%) had moderate insight as per the SAI –E scale whereas 24 (60%) had good insight. And of the female patients of this study population 27 (44.3%) had moderate insight as per the SAI –E scale and 34 (55.7%) had good insight.

P value 0.672

Employment status:

Among the employed 19(47.5%) had moderate insight as assessed by SAI-E and 24(60%) had good insight. 24(39.3%) of the unemployed had moderate insight whereas, 37(60.7%) of them had good insight.

Socioeconomic class: Among the upper class, insight as assessed by SAI-E was found to be moderate in 0(0%) and good in 1 (100%). Insight was moderate in 17(35.4%) and good in 31(64.6%) of the middle class population. In the lower class 26(50%) had moderate insight and 26(50%) had good insight.

Area of Residence

In this study population of patients with schizophrenia 30(42.9%) of those residing in rural areas had moderate insight and 40 (57.1%) had good insight. Among the people hailing from urban areas 13(41.95) had moderate insight and 18 (58.1%) had good insight

P value :0.931

Marital Status

In this study population of patients with schizophrenia 13(40.6%) of those who are single had moderate level of insight and 19 (59.4%) had good insight. 24(40%) of those married had moderate insight and the insight was good in 36(60%) of them. In the divorced/separated 6(66.7%) had moderate insight and 3 (33.3%) had good insight.

TABLE 3b: Association between Socio demographic variables and Attitude to medication and Compliance

| SOCIODEMOGRAPHIC VARIABLES | | ASSESSMENT TOOLS | | | | | |
|-------------------------------|--------------|----------------------|----------------------------|------------|---------------------|--------------------------------|------------|
| | | DAI 10 | | | MORISKY | | |
| | | Favourabl e(n=96) | Not Favourabl e(n=5) | P value | Compliant (n=32) | Non complian t (n=69) | P value |
| AGE(Years) | <=35(n=61) | 58(95.1%) | 3(4.9%) | 0.985 | 19(31.1%) | 42(68.9 %) | 0.886 |
| | >35(n=40) | 38(95%) | 2(5%) | | 13(32.5%) | 27(67.5 %) | |
| Gender | Male(n=40) | 37(92.5%) | 3(7.5%) | 0.339 | 14(35.0%) | 26(65.0 %) | 0.562 |
| | Female(n=61) | 59(96.7%) | 2(3.3%) | | 18(29.5%) | 43(70%) | |

| | | | | | | | |
|----------------------|--------------------------|-----------|---------|-------|-----------|-----------|-------|
| Employment status | Employed(n=40) | 38(95%) | 2(5%) | 0.985 | 13(32.5%) | 27(67.5%) | 0.886 |
| | Unemployed(n=61) | 58(95.1%) | 3(4.9%) | | 19(31.1%) | 42(68.9%) | |
| Socio-Economic Class | Upper(n=1) | 1(100%) | 0(0%) | 0.836 | 0(0%) | 1(100%) | 0.762 |
| | Middle(n=48) | 45(93.8%) | 3(6.2%) | | 16(33.3%) | 32(66.7%) | |
| | Lower(n=52) | 50(96.2%) | 2(3.8%) | | 16(30.8%) | 36(69.2%) | |
| Residence | Rural(n=70) | 68(97.1%) | 2(2.9%) | 0.145 | 20(28.6%) | 50(71.4%) | 0.312 |
| | Urban(n=31) | 28(90.3%) | 3(9.7%) | | 12(38.7%) | 19(61.3%) | |
| Marital status | Single(n=32) | 29(90.6%) | 3(9.4%) | 0.344 | 12(37.5%) | 20(62.5%) | 0.663 |
| | Married(n=60) | 58(96.7%) | 2(3.3%) | | 17(28.3%) | 43(71.7%) | |
| | Divorced/separated (n=9) | 9(100%) | 0(0%) | | 3(33.3%) | 6(66.7%) | |

TABLE 3b: Association between Socio demographic variables and Attitude to medication and Compliance

Drug attitude inventory (DAI) and socio demographic variables:

Age: In this study population of patients with schizophrenia in those **aged 35 or below** the patients with a favourable attitude to medication constituted 58(95.1%) and those with a not favourable attitude were 3(4.9%). In this study population of patients with schizophrenia in those aged more than 35 years the patients with a favourable attitude to medication constituted 38(95%) and those with a not favourable attitude were 2(5%)

P value: 0.985

Gender

Of the male patients of this study population of patients with schizophrenia 37(92.5%) had a favourable attitude towards medication whereas 3(7.5%) had a not favourable attitude.

And of the female patients of this study population 59(96.7%) had a favourable attitude and 2(3.3%) had a not favourable attitude

P value: 0.339

Employment:

38(95%) of the employed had a favourable attitude towards medication as assessed by DAI 10, whereas 2(5%) of them had a not favourable towards medication. Of the unemployed, 58(95.1%) had a favourable attitude, whereas, 3 (4.9%) had a not favorable attitude.

P value:0.985

Socio Economic Class: In the upper class 1(100%) had a favourable attitude towards medication and 0(0%) had a not favourable attitude. 45(93.8%) of the middle class had a favourable attitude and 3(6.2%) had a not favourable attitude. In the lower economic class 50(96.2%) had a favourable attitude, 2(3.8%) had a not favourable attitude. Pvalue: 0.836

Area of Residence:

In those hailing from the rural areas 68(97.1%) had a favorable attitude whereas 2(2.9%) had a not favourable attitude. 28(90.3%) of the urban had a favourable attitude and 3(9.7%) had a not favourable attitude.

Pvalue: 0.145

Marital Status:

Among the single 29(90.6%) had a favourable attitude and 3 (9.4%) had a not favourable attitude. Of the married 58(96.7%) had a favorable attitude and 2 (3.3 %) had a not favourable attitude. Among the divorced/separated 9(100%) had a favourable attitude towards medication, and 0(0%) had a not favorable attitude. Pvalue : 0.344

Morisky scale and socio demographic variables:

Age : In this study population of patients with schizophrenia in those aged 35 or below the number of patients who were compliant with medication was 19(31.1%) and those with poor compliance were 42(68.9%). In this study population of patients with schizophrenia in those aged 35 or above the patients who were compliant with medication was 13(32.5%) and those with poor compliance were 27(67.5%) as per the Morisky scale. P value: 0.886

Gender:

Of the males 14(35%) compliant and 26 (65 %) were noncompliant as per the Morisky chart. 18 (29.5 %) of the women were compliant and 43 (70.5 %) were noncompliant.

P value 0.562

Employment status:

Of the employed , 13(32.5%) were compliant with medication, whereas 27(67.5%) were not compliant with medication. Of the unemployed, 19(31.1%) were compliant and 42(68.9%) were not compliant with medication.

P value: 0.886

Socio economic class:

Among the upper socioeconomic class , 0(0%) was compliant with medication, and 1(100%) was not compliant with medication. In the middle class population, 16(33.3%)

were compliant with medication, and 32(66.7%) were not compliant with medication. In the lower class population 16(13.8%) were compliant with medication, and 36(69.2%) were not compliant with medication.

Pvalue: 0.762

Area of Residence: Among people residing in the rural area 20(28.65) were compliant with medication and 50(71.4%) were not compliant with medication.

Among those residing in the urban area 12(38.7%) were compliant with medication and 19(61.3%) were not compliant with medication. Pvalue:0.312

Marital status : Among the people who were single 12(37.5%) were compliant whereas 20 (62.5%) were not compliant with medication. 17(28.3%) of the married were compliant and 43(71.7%) were not compliant with medication as per Morisky scale. Among the divorced/separated, 3(33.3%) were compliant with medication whereas 6(66.7%) were not compliant with medication. P value: 0.663

TABLE 4a: Association between Psychopathology, Insight, Attitude to medication and Compliance to medication

| ASSESSMENT TOOLS | | COMPLIANCE WITH MEDICATION | | | | | |
|----------------------------|------------------------|----------------------------|----------------------------|------------|---------------------|----------------------------|------------|
| | | MORISKY | | | CHART REVIEW | | |
| | | Compliant (n=32) | Non compliant (n=69) | P value | Compliant (n=68) | Non compliant (n=33) | P value |
| PANSS (Psychopathology) | Mild(n=88) | 31(35.2%) | 57(64.8%) | 0.046 | 63(71.6%) | 25(28.4%) | 0.047 |
| | Moderate(n=13) | 1(7.7%) | 12(92.3%) | | 5(38.5%) | 8(61.5%) | |
| SAI-E (Insight) | Moderate(n=43) | 11(25.6%) | 32(74.4%) | 0.256 | 28(61.5%) | 15(34.9%) | 0.683 |
| | Good(n=58) | 21(36.2%) | 37(63.8%) | | 40(69%) | 18(31.0%) | |
| DAI 10 (Attitude) | Favourable(n=96) | 32(33.3%) | 64(66.7%) | 0.118 | 66(68.8%) | 30(31.2%) | 0.683 |
| | Not Favourable(n=5) | 0 | 5(100%) | | 2(40%) | 3(60.0%) | |

Table 4a:Severity and compliance

Severity and compliance using Morisky scale.

In this study population, those patients with mild severity 31 (35.2%) were compliant whereas 57 (64.8%) were noncompliant.

In those with moderate severity 1 (7.7%) was compliant whereas 12 (92.3%) were non-compliant.

P value 0.046

Severity using chart review

In those patients with mild severity 63 (71.6 %) were compliant whereas 25 (28.4%) were noncompliant

In those with moderate severity 5 (38.5 %) were compliant whereas 8 (61.5 %) were non-compliant.

P value 0.017

Insight and compliance

Insight and compliance according to Morisky scale

In those patients with moderate insight 11 (25.6 %) were compliant whereas 32 (74.4 %) were noncompliant

In those with good insight 21 (36.2 %) were compliant whereas 37 (63.8 %) were non-compliant. P value 0.256

Insight and compliance according to Chart review

In those patients with moderate insight 28 (65.1 %) were compliant whereas 15 (34.9 %) were noncompliant

In those with good insight 40 (69.0 %) were compliant whereas 18 (31%) were non-compliant.

P value 0.683

Attitude and compliance

Compliance as per the Morisky scale

In those with a favourable attitude 32 (33.3 %) were compliant with medication whereas 64(66.7 %) were non compliant.

In those with a not favourable attitude to medication none (0%) was compliant with medication and 5 (100%)were not compliant with medication.

P value 0.118

Compliance as per the chart review

In those with a favourable attitude 66(68.8%) were compliant with medication whereas 30 (31.2 %) were non compliant.

In those with a not favourable attitude to medication 2 (40%) was compliant with medication and (60%)were not compliant with medication. P value 0.181

TABLE 4b: Association between Psychopathology , Insight and Attitude to medication

| ASSESSMENT TOOLS | | DAI 10(Attitude) | | P value |
|----------------------------|----------------|------------------|---------------------|---------|
| | | Favourable(n=96) | Not Favourable(n=5) | |
| PANSS (Psychopathology) | Mild(n=88) | 86(97.7%) | 2(2.3%) | 0.001 |
| | Moderate(n=13) | 10(76.9) | 3(23.1%) | |
| SAI-E (Insight) | Moderate(n=43) | 39(90.7%) | 4(9.3%) | 0.083 |
| | Good(n=58) | 57(98.3%) | 1(1.7%) | |

Table 4b: Association between psychopathology, insight and attitude to medication

Among the patients who had mild psychopathology as per the PANSS scale, 86(97.7%) had a favourable attitude towards medication, and 2(2.3%) had a not favourable attitude towards medication. Of the patients who had a moderate psychopathology 10(76.9%) had a favourable attitude towards medication whereas, 3(23.1%) had a not favourable attitude towards medication.

P value: 0.001

Among the patients who had moderate insight as per SAI-E , 39 (90.7%) had a favourable attitude towards medication, and 4(9.3%) had a not favourable attitude towards medication.

57(98.3%) of the patients with good insight had favourable attitude towards medication whereas, 1(1.7%) had a not favourable attitude towards medication.

Pvalue: 0.007

TABLE 4c: Association between Psychopathology and Insight

| ASSESSMENT TOOLS | | SAI-E (Insight) | | P value |
|----------------------------|----------------|--------------------|------------|---------|
| | | Moderate(n=43) | Good(n=58) | |
| PANSS (Psychopathology) | Mild(n=88) | 33(37.5%) | 55(62.5%) | 0.007 |
| | Moderate(n=13) | 10(76.9%) | 3(23.1%) | |

Table 4c: Association between psychopathology and insight

Of the patients with mild severity of psychopathology as per PANSS scale, 33 (37.5%) had moderate level of insight and 55(62.5%) had good level of insight. Of the patients with moderate psychopathology 10(76.9%) had moderate insight, and 3(23.1%) had good insight.

DISCUSSION

Previous studies have documented the inverse relationship between psychopathology and Insight (Saravanan et al., 2007)(Amador, XF and David, AS., 1998). However, the study by Johnson et al. shows that the relationship between psychopathology and insight is not static. The earlier were cross-sectional and the study by later is a cohort study. They found that psychopathology, insight and explanatory models changed over the 5-year period.

Among this group of patients with chronic schizophrenia the majority of patients (60%) attending the review OPD were less than 35 and the mean age was 35.

Among this group of patients with chronic schizophrenia the majority of patients attending the review OPD were women.

Sixty percent of the study population was unemployed. The housewives were entered as unemployed and this may be one reason for this finding. 99% of the population belonged to the lower or middle socioeconomic class. This may due to various factors and may be reflecting the general population attending the hospital and may have to be compared with the population of acute patients who come to the OPD.

Among the group none of the patients was widowed. It may be that the widowed are not attending the review OPD, or are doing well. The support may be absent after the death of the spouse and they may not be coming or brought to the hospital. And only 9 % were divorced or separated, indicating a tendency of increased tolerance towards patients who are only mildly or moderately ill and having moderate to good insight.

In both the groups (85% in males and 89 % in females) the majority of patients had mild illness.

All the patients came under either mild or moderate severity (p value 0.605). The majority of the patients in this group came under the category of mild psychopathology as per the total score in the PANSS scale. The psychopathology as assessed by the PANSS scale was either mild for 87% of patients and moderate for 13% of patients. None of the patients came under other categories of psychopathology absent, markedly ill and severely ill. Possible reasons for this could be that those who improved with treatment attended medical care on a regular basis in comparison to those who did not improve with treatment.

According to the SAI E scale majority of the patients had good insight. No patient scored poor in insight. Cause for this finding could be that those with poor insight are possibly taken care by the family members and are not attending the medical care facility regularly.

Compliance as assessed by the Morisky scale(Morisky et al., 2008) showed that 32 % were compliant and 68 % were non compliant. In spite of the patients having good insight the compliance remains a problem. Cause for the inconsistency between the attitude towards illness as reflected in the insight and practice of regular intake of medication could be analyzed and specific interventions targeted at improving compliance. Financial or other problems which could contribute towards reason for noncompliance may be addressed with the family or support group.

The chart review showed that only 33% were noncompliant and that the majority 67% was compliant. The discrepancy between the two scales can be interpreted in different

ways. The Morisky is a self rated scale. The chart shows what the patient or carer reports with at times the impression of the therapist based upon the regularity for review, presence or absence of side effects etc.,

The majority of the patients (60 %) were below the age of 35yrs which was the mean age for the group. The age at first contact was less than 35yrs for 71% of patients and more than 35 for 29 % of patients. The mean age of contact was 30 years.

The majority (85%) of patients had a continuous course of the disorder, schizophrenia. The patients who recover or who remit may be coming to review less often. They may be brought to the hospital on recurrence or relapse.. A study of the population attending the Emergency Department may inform us regarding the % of them compared to those with acute psychosis. The need for education regarding prophylactic treatment in schizophrenia has to be stressed.

The high prevalence of medical co-morbidity known to be present in the schizophrenics was not found in the chart review of this population of patients. It may be due to the lack of reporting, recording, the medically ill dropping out unable to come for review due to disability or due to financial overburden or death , or attending medical OPD with or without continuing the psychiatric medication.

Substance use among this population was found to be less than that recorded for patients with chronic schizophrenia as reported by Blanchard et al., (2000). Possible cause for this difference could be the preponderance of women in this group of patients, under reporting, or the actual low prevalence in this group of subjects.

This graph summarizes the findings from the administration of the Schedule for Assessment of Insight – Expanded version (SAI -E) to this study population of patients with schizophrenia.

The schedule for assessment of insight expanded version assesses mainly three dimensions of insight. The awareness of the patient about the changes in him or her, the attribution of these changes and the actions subsequent to it. The first seven questions in the schedule assess the awareness, the next two questions the attribution and the last three the action. This graph shows the percentage of the scores the patients of this study population scored in these different dimensions. In the dimension of awareness the patients of this study population scored 80% of the maximum score possible. And the score in the dimension of attribution was 36 % of the maximum score possible, in this study population. In the dimension of action, the patients of this study population scored 67 % of the maximum score.

Though the majority of patients are having good insight, when the different dimensions of insight namely awareness, attribution and action are concerned, it was seen that the scores were not uniform.

Patients with mild or moderate severity only attend the regular outpatient department review. Those on the extremes may not be getting regular treatment- neither prophylactic nor therapeutic.

No patient scored as poor in insight as per the SAI E scale. It may be that only with good or moderate insight attend the outpatient reviews.

Irrespective of gender 2/3 of the patients are non compliant as per Morisky scale.

Patients with mild or moderate severity only attend the regular outpatient department review. Those on the extremes may not be getting regular treatment- neither prophylactic nor therapeutic.

No patient scored as poor in insight as per the SAI E scale. It may be that only with good or moderate insight attend the outpatient reviews.

Limitations

Cross sectional design of the study. The cross sectional design of the study cannot reveal the change or the causes for change in pattern of the different variables and the measured values over a period of time. The results cannot be extrapolated to the patient with acute onset schizophrenia who goes on to develop chronic schizophrenia.

Sample bias. Sample bias related to the fact that this group of patients with schizophrenia belongs to a group of patients who attend a tertiary care hospital for treatment on a regular basis. Such a group is a priori compliant, regular for review and having less psychopathology and better insight- the same findings of the study.

Clinical implications

The study involved patients who come to the outpatient department (OPD) accompanied by a carer who is usually a close family member. It may be that those who attend the OPD by proxy will give a different profile of demographic and clinical features.

The severely ill and the well are less represented in this study population. It may be interpreted as the severely ill are either in the community and not reaching the treatment centres or that they have become well either with treatment or with natural course.

A follow up study of acute cases may give a better idea about the response to treatment, the different patterns of follow up and the reasons for the same.

Future direction

The follow up of the acute schizophrenia patients over a period of years may answer the few queries raised by this study. Such studies may indicate the possible differences in the characteristics between the patients who attend the regular OPD and those who are lost for follow up.

CONCLUSIONS AND SUMMARY

In this study population of patients with schizophrenia who regularly attend the outpatient department, the majority were females, aged less than 35, married, unemployed, belonging to the low socio economic class, residing in the rural areas, Hindu by religion, having a continuous course of disorder with mild severity, manifesting good insight, noncompliant with medication as per the Morisky scale and compliant as per the chart review and with no physical comorbidity or substance use or family history of any psychiatric morbidity.

There was significant negative correlation between the total insight score as per SAI E and the total PANSS (p value 0.007). Majority of patients (95 %) of this study population had a favourable attitude to medication. PANSS severity and Drug attitude inventory (DAI 10) showed a negative association (p value =0.001) in that the more the psychopathology the less favourable was the attitude towards medication. According to the Morisky scale, the patients were less compliant regardless of the psychopathology as assessed by PANSS (0.046). As per the chart review however it was seen that patients with mild psychopathology were more compliant compared to those patients with moderate psychopathology. (p=0.047).

PANSS score was associated with insight, attitude to medication and compliance as assessed by the different tools. However insight was not related to compliance or attitude to medication.

Though the assessment showed favourable attitude towards medication in the majority of patients with schizophrenia in this study population, it was not translated in to compliance

with medication. Compliance with medication was seen associated with psychopathology but not with the other variables assessed in this study. Interventions targeted at improving compliance may have to be looked at for effective treatment of schizophrenia. Many of the queries may be clarified by the follow up studies of the acute schizophrenia patients who are brought to the OPD.

BIBLIOGRAPHY

- Agostini JV, 2007. Measuring drug burden: A step forward. *Arch Intern Med* 167, 753–754.
- Amador, X., 2006. I am not sick I dont need help! Helping the seriously mentally ill accept treatment .Apractical guide for families and therapists, 1st ed. Vida Press,L.L.C., United states of America.
- Amador, X., Kronengold, H., 2004. Understanding and assessing insight . *Insight and Psychosis: Awareness of Illness in Schizophrenia and Related Disorders*, 2nd ed. ed. Oxford University Press, Oxford, UK.
- Amador, X. F, David, A. S., 1998. *Insight and Psychosis*. Oxford University Press., New York.
- Arango, C., Amador, X., 2010. Lessons Learned About Poor Insight. *Schizophr Bull*.
- Ascher-Svanum, H., Faries, D.E., Zhu, B., Ernst, F.R., Swartz, M.S., Swanson, J.W., 2006. Medication adherence and long-term functional outcomes in the treatment of schizophrenia in usual care. *J Clin Psychiatry* 67, 453–460.
- Baier, M., 2010. Insight in Schizophrenia: A Review. *Current Psychiatry Reports* 12, 356 – 361.
- Baloush-Kleinman, V., Levine, S.Z., Roe, D., Shnitt, D., Weizman, A., Poyurovsky, M., 2011. Adherence to antipsychotic drug treatment in early-episode schizophrenia: a six-month naturalistic follow-up study. *Schizophr. Res.* 130, 176–181.

- Beck, A.T., Baruch, E., Balter, J.M., Steer, R.A., Warman, D.M., 2004. A new instrument for measuring insight: the Beck Cognitive Insight Scale. *Schizophrenia Research* 68, 319–329.
- Beck, E.-M., Cavelti, M., Wirtz, M., Kossowsky, J., Vauth, R., 2011. How do socio-demographic and clinical factors interact with adherence attitude profiles in schizophrenia? A cluster-analytical approach. *Psychiatry Res* 187, 55–61.
- Blanchard, J.J., Brown, S.A., Horan, W.P., Sherwood, A.R., 2000. Substance use disorders in schizophrenia: review, integration, and a proposed model. *Clinical Psychology Review* 20, 207–234.
- Brent, B.K., Giuliano, A.J., Zimmet, S.V., Keshavan, M.S., Seidman, L.J., 2011. Insight into illness in patients and caregivers during early psychosis: a pilot study. *Schizophr. Res.* 127, 100–106.
- Campos, M.S., Garcia-Jalon, E., Gilleen, J.K., David, A.S., Peralta, V.M.D., Cuesta, M.J., 2011. Premorbid personality and insight in first-episode psychosis. *Schizophr Bull* 37, 52–60.
- Cooper, D., Moisan, J., Grégoire, J.-P., 2007. Adherence to atypical antipsychotic treatment among newly treated patients: a population-based study in schizophrenia. *J Clin Psychiatry* 68, 818–825.
- Drake, R.J., Dunn, G., Tarrier, N., Bentall, R.P., Haddock, G., Lewis, S.W., 2007. Insight as a predictor of the outcome of first-episode nonaffective psychosis in a prospective cohort study in England. *J Clin Psychiatry* 68, 81–86.

- Easton, Chen, 2006. The American Psychiatric Publishing Textbook of schizophrenia. American Psychiatric Publishing, Inc.
- Explanatory model of illness among patients with chronic mental disorders attending traditional healers, 1998. . Diplomate of national board, New Delhi, India.
- Fenton, W.S., Blyler, C.R., Heinssen, R.K., 1997. Determinants of Medication Compliance in Schizophrenia: Empirical and Clinical Findings. *Schizophr Bull* 23, 637–651.
- Freudenreich, O., Cather, C., 2012. Antipsychotic Medication Nonadherence: Risk Factors and Remedies. *Focus* 10, 124–129.
- Fujikawa, M., Togo, T., Yoshimi, A., Fujita, J., Nomoto, M., Kamijo, A., Amagai, T., Uchikado, H., Katsuse, O., Hosojima, H., Sakura, Y., Furusho, R., Suda, A., Yamaguchi, T., Hori, T., Kamada, A., Kondo, T., Ito, M., Odawara, T., Hirayasu, Y., 2008. Evaluation of subjective treatment satisfaction with antipsychotics in schizophrenia patients. *Prog. Neuropsychopharmacol. Biol. Psychiatry* 32, 755–760.
- Goff, D.C., Hill, M., Freudenreich, O., 2010. Strategies for improving treatment adherence in schizophrenia and schizoaffective disorder. *J Clin Psychiatry* 71 Suppl 2, 20–26.
- Hogan, T.P., Awad, A.G., Eastwood, R., 1983. A self-report scale predictive of drug compliance in schizophrenics: reliability and discriminative validity. *Psychol Med* 13, 177–183.
- Johnson, S., Sathyaseelan, M., Charles, H., Jeyaseelan, V., Jacob, K., 2012a. Insight, psychopathology, explanatory models and outcome of schizophrenia in India: a prospective 5-year cohort study. *BMC Psychiatry* 12, 159.

- Johnson, S., Sathyaseelan, M., Charles, H., Jeyaseelan, V., Jacob, K.S., 2012b. Insight, psychopathology, explanatory models and outcome of schizophrenia in India: a prospective 5-year cohort study. *BMC Psychiatry* 12, 159.
- Kampman, O., Laippala, P., Väänänen, J., Koivisto, E., Kiviniemi, P., Kilkku, N., Lehtinen, K., 2002. Indicators of medication compliance in first-episode psychosis. *Psychiatry Res* 110, 39–48.
- Kane, J.M., 2006. Utilization of long-acting antipsychotic medication in patient care. *CNS Spectr* 11, 1–7; quiz 7–8.
- Kemp, R., David, A., 1997. Insight and compliance. In *Treatment Compliance and the Treatment Alliance in Serious Mental Illness*. Harwood Academic., The Netherlands.
- Khalkho, I.P., Khess, C.R.J., 1999. DRUG NON-COMPLIANCE IN MANIA : THE INDIAN EXPERIENCE. *Indian J Psychiatry* 41, 108–110.
- Lacro, J.P., Dunn, L.B., Dolder, C.R., Leckband, S.G., Jeste, D.V., 2002. Prevalence of and risk factors for medication nonadherence in patients with schizophrenia: a comprehensive review of recent literature. *J Clin Psychiatry* 63, 892–909.
- Lieberman, J.A., Stroup, T.S., McEvoy, J.P., Swartz, M.S., Rosenheck, R.A., Perkins, D.O., Keefe, R.S.E., Davis, S.M., Davis, C.E., Lebowitz, B.D., Severe, J., Hsiao, J.K., 2005. Effectiveness of Antipsychotic Drugs in Patients with Chronic Schizophrenia. *New England Journal of Medicine* 353, 1209–1223.
- Llorca, P.M., Miadi-Fargier, H., Lançon, C., Jasso Mosqueda, G., Casadebaig, F., Philippe, A., Guillon, P., Mehnert, A., Omnès, L.F., Chicoye, A., Durand-Zaleski, I., 2005.

- [Cost-effectiveness analysis of schizophrenic patient care settings: impact of an atypical antipsychotic under long-acting injection formulation]. *Encephale* 31, 235–246.
- Löffler, W., Kilian, R., Toumi, M., Angermeyer, M.C., 2003. Schizophrenic patients' subjective reasons for compliance and noncompliance with neuroleptic treatment. *Pharmacopsychiatry* 36, 105–112.
- Lysaker, P.H., Dimaggio, G., Buck, K.D., Callaway, S.S., Salvatore, G., Carcione, A., Nicolò, G., Stanghellini, G., 2011. Poor insight in schizophrenia: links between different forms of metacognition with awareness of symptoms, treatment need, and consequences of illness. *Compr Psychiatry* 52, 253–260.
- Masand, P.S., Narasimhan, M., 2006. Improving adherence to antipsychotic pharmacotherapy. *Curr Clin Pharmacol* 1, 47–56.
- Masand, P.S., Roca, M., Turner, M.S., Kane, J.M., 2009. Partial Adherence to Antipsychotic Medication Impacts the Course of Illness in Patients With Schizophrenia: A Review. *Prim Care Companion J Clin Psychiatry* 11, 147–154.
- Mehrotra, S., Sengupta, S., 2006. Insight and Psychopathology in Schizophrenia: A Four-Week Longitudinal Study. *German Journal of Psychiatry* 48–52.
- Mintz, A.R., Dobson, K.S., Romney, D.M., 2003. Insight in schizophrenia: a meta-analysis. *Schizophr. Res.* 61, 75–88.
- Morisky, D.E., Ang, A., Krousel-Wood, M., Ward, H.J., 2008. Predictive Validity of A Medication Adherence Measure in an Outpatient Setting. *J Clin Hypertens (Greenwich)* 10, 348–354.

- Mysore, A., Parks, R.W., Lee, K.-H., Bhaker, R.S., Birkett, P., Woodruff, P.W.R., 2007. Neurocognitive basis of insight in schizophrenia. *BJP* 190, 529–530.
- Nielsen, R.E., Lindström, E., Nielsen, J., Levander, S., 2012. DAI-10 is as good as DAI-30 in schizophrenia. *Eur Neuropsychopharmacol* 22, 747–750.
- Parellada, M., Fraguas, D., Bombín, I., Otero, S., Castro-Fornieles, J., Baeza, I., Gonzalez-Pinto, A., Graell, M., Soutullo, C., Paya, B., Arango, C., 2009. Insight correlates in child- and adolescent-onset first episodes of psychosis: results from the CAFEPS study. *Psychological Medicine* 39, 1433–1445.
- Perkins, D.O., 2002. Predictors of noncompliance in patients with schizophrenia. *J Clin Psychiatry* 63, 1121–1128.
- Rathod, S., Kingdon, D., Smith, P., Turkington, D., 2005. Insight into schizophrenia: the effects of cognitive behavioural therapy on the components of insight and association with sociodemographics—data on a previously published randomised controlled trial. *Schizophrenia Research* 74, 211–219.
- Sadock, benjamin, Sadock, V., 2007. SYNOPSIS OF PSYCHIATRY BEHAVIOURAL SCIENCES /CLINICAL PSYCHIATRY, 10th ed. Lippincott williams and wilkins, United states of America.
- San, L., Ciudad, A., Alvarez, E., Bobes, J., Gilaberte, I., 2007. Symptomatic remission and social/vocational functioning in outpatients with schizophrenia: prevalence and associations in a cross-sectional study. *Eur. Psychiatry* 22, 490–498.
- Saravanan, B., Jacob, K.S., Johnson, S., Prince, M., Bhugra, D., David, A.S., 2007. Assessing insight in schizophrenia: East meets West. *BJP* 190, 243–247.

- Saravanan, B., Jacob, K.S., Johnson, S., Prince, M., Bhugra, D., David, A.S., 2010. Outcome of first-episode schizophrenia in India: longitudinal study of effect of insight and psychopathology. *Br J Psychiatry* 196, 454–459.
- Sims A, 2009. Descriptive Phenomenology. In *New Oxford Textbook of Psychiatry*, 2nd edition. ed. Oxford University Press.
- SobhaLakshmi B, 2006. Explorative study to identify the factors associated with relapse in patients with psychosis. Dr.MGR Medical University,Chennai,South India.
- Sulekha VK, 2009. A study to assess the relationship of insight to psychopathology and global functioning in patient with schizophrenia. Dr.MGR Medical University,Chennai,South India.
- Xia, J., Merinder, L.B., Belgamwar, M.R., 1996. Psychoeducation for schizophrenia, in: *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd.
- Yang, J., Ko, Y.-H., Paik, J.-W., Lee, M.-S., Han, C., Joe, S.-H., Jung, I.-K., Jung, H.-G., Kim, S.-H., 2012. Symptom severity and attitudes toward medication: impacts on adherence in outpatients with schizophrenia. *Schizophr. Res.* 134, 226–231.

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INSIGHT AND ATTITUDE TO MEDICATION IN SCHIZOPHRENIA

INTRODUCTION

Schizophrenia, with an approximate lifetime risk of 1 in 100, and an annual incidence of 0.5 to 5.0 per 10,000, is one of the leading causes of disability in the world. As per the assessment of leading cause of years lived with disability, worldwide statistics showed that schizophrenia ranks ninth in the order among various other disorders which causes disability to an individual (WHO, 2005)

The onset of schizophrenia is usually in early adulthood. Schizophrenia has an earlier onset in males. The mean ages of onset are 20 and 25 years in males and females respectively (Easton and Chen, 2006). The course is varied depending upon multiple factors including patient characteristics, severity of illness, availability of treatment, response and adherence to medications, and the availability of rehabilitation services. Irrespective of the course, the illness is marked by impairment and disability in socio occupational functioning, the extent of which is influenced by presence of residual psychotic symptoms. The early onset and chronic course

PAGE: 1 OF 49

Text-Only Report



INSTITUTIONAL REVIEW BOARD (IRB)
CHRISTIAN MEDICAL COLLEGE
VELLORE 632 002, INDIA

Dr.B.J.Prashantham, M.A.,M.A.,Dr.Min(Clinical)
Director, Christian Counseling Centre
Editor, Indian Journal of Psychological Counseling
Chairperson, Ethics Committee, IRB

Dr. Alfred Job Daniel, MS Ortho
Chairperson, Research Committee &
Principal

Dr. Nihal Thomas
MD, MNAMS, DNB(Endo), FRACP(Endo), FRCP(Edin)
Secretary, Ethics Committee, IRB
Additional Vice Principal (Research)

Ref: Res/3/2012

May 30, 2012

Dr. T.P. Subhalakshmi
PG Registrar
Department of Psychiatry,
Christian Medical College
Vellore 632 002

Dear Dr. Subhalakshmi,

Sub: FLUID Research grant project NEW PROPOSAL:
Attitude to medication and insight in patients with schizophrenia
Dr. T.P. Subhalakshmi, PG Registrar, Psychiatry, Dr. Suja Kurian, Professor,
Psychiatry Unit I.

Ref: IRB Min. No. 7789 dated 9.3.2012

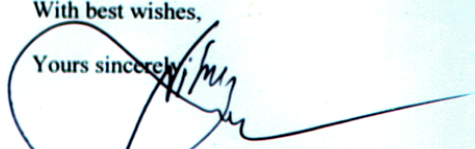
I enclose the following documents:-

1. Institutional Review Board approval
2. Agreement

Could you please sign the agreement and send it to Dr. Nihal Thomas, Addl. Vice
Principal (Research), so that the grant money can be released.

With best wishes,

Yours sincerely,


Dr. Nihal Thomas
Secretary (Ethics Committee)
Institutional Review Board



**INSTITUTIONAL REVIEW BOARD (IRB)
CHRISTIAN MEDICAL COLLEGE
VELLORE 632 002, INDIA**

Dr.B.J.Prashantham, M.A.,M.A.,Dr.Min(Clinical)
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Additional Vice Principal (Research)

May 30, 2012

Dr. T.P. Subhalakshmi
PG Registrar
Department of Psychiatry
Christian Medical College
Vellore 632 002

Sub: **FLUID Research grant project NEW PROPOSAL:**
Attitude to medication and insight in patients with schizophrenia
Dr. T.P. Subhalakshmi, PG Registrar, Psychiatry, Dr. Suja Kurian, Professor,
Psychiatry Unit I.

Ref: IRB Min. No. 7789 dated 9.3.2012

Dear Dr. Subhalakshmi,

The Institutional Review Board (Blue, Research and Ethics Committee) of the Christian Medical College, Vellore, reviewed and discussed your project entitled " Attitude to medication and insight in patients with schizophrenia " on March 9, 2012.

The Committees reviewed the following documents:

1. Format for application to IRB submission
2. Information Sheet and Consent Form (English and Tamil)
3. Schedule for the assessment of insight (SAI-E)
4. General Psychopathology Subscale
5. Positive and Negative symptom scale (PANSS) (English)
6. Short Explanatory model interview (English and Tamil)
7. Morisky scale (English and Tamil)
8. Drug attitude inventory (English and Tamil)

The following Institutional Review Board (Ethics Committee) members were present at the meeting held on March 9, 2012 in the CREST/SACN Conference Room, Christian Medical College, Bagayam, Vellore- 632002.



INSTITUTIONAL REVIEW BOARD (IRB)
CHRISTIAN MEDICAL COLLEGE
VELLORE 632 002, INDIA

Dr. B.J. Prashantham, M.A., M.A., Dr. Min (Clinical)
Director, Christian Counseling Centre
Editor, Indian Journal of Psychological Counseling
Chairperson, Ethics Committee, IRB

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Chairperson, Research Committee &
Principal

Dr. Nihal Thomas
MD, MNAMS, DNB(Endo), FRACP(Endo), FRCP(Edin)
Secretary, Ethics Committee, IRB
Additional Vice Principal (Research)

| Name | Qualification | Designation | Other Affiliations |
|------------------------------|--|--|--------------------|
| Dr. B.J. Prashantham | MA (Counseling), MA (Theology), Dr Min(Clinical) | Chairperson(IRB)& Director, Christian Counselling Centre | External |
| Mr. Harikrishnan | BL | Lawyer | External |
| Mrs. S. Pattabiraman | BSc, DSSA | Social Worker, Vellore | External |
| Mrs. Ebenezer Ellen Benjamin | M.Sc. (Nursing) | Maternity Nursing, CMC. | |
| Dr. Vathsala Sadan | M.Sc, Ph.D | Community Health Nursing, CMC. | |
| Dr. Jayaprakash Muliyl | BSC, MBBS, MD, MPH, DrPH(Epid), DMHC | Academic Officer, CMC | |
| Mr. Joseph Devaraj | BSc, BD | Chaplain, CMC | |
| Dr. Nihal Thomas | MD MNAMS DNB(Endo) FRACP(Endo) FRCP(Edin) | Secretary IRB (EC)& Dy. Chairp (IRB), Professor of Endocrinology & Addl. Vice Principal (Research), CMC. | |

We approve the project to be conducted as presented.

The Institutional Ethics Committee expects to be informed about the progress of the project, any serious adverse events occurring in the course of the project, any changes in the protocol and the patient information/informed consent and requires a copy of the final report.



INSTITUTIONAL REVIEW BOARD (IRB)
CHRISTIAN MEDICAL COLLEGE
VELLORE 632 002, INDIA

Dr.B.J.Prashantham, M.A.,M.A.,Dr.Min(Clinical)
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Principal

Dr. Nihal Thomas
MD, MNAMS, DNB(Endo), FRACP(Endo), FRCP(Edin)
Secretary, Ethics Committee, IRB
Additional Vice Principal (Research)

A sum of Rs. 5,450 /- (Rupees Five thousand four hundred fifty only) will be sanctioned for 6 months.

Yours sincerely,

Dr. Nihal Thomas
Secretary (Ethics Committee)
Institutional Review Board

Secretary
Institutional Review Board
(Ethics Committee)
Christian Medical College
Vellore - 632 002, Tamil Nadu, India

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|---|----|--------|------|-----|--------|--------|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|------|------|-----|------|------|------|------|------|------|------|------|----|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z12 = 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | A | |
| 1 | id | hosp | name | age | agecon | gender | edu | y | occ | emp | fin | inc | sec | res | mge | rel | pp | pn | pg | pi | ptot | psev | sai | sal1 | sal2 | sal3 | sal4 | sal5 | sal6 | sal7 | sal8 | sa |
| 2 | 1 | 125340 | BD | 26 | 19 | 1 | 2 | 15 | 6 | 1 | | | 5 | 1 | 1 | 2 | 8 | 18 | 34 | 3 | 60 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 3.5 | 2 | 1 | |
| 3 | 2 | 136614 | KS | 32 | 26 | 1 | 4 | 8 | 3 | 1 | | | 5 | 2 | 4 | 1 | 24 | 12 | 38 | 3 | 74 | 2 | 2 | 2 | 2 | 2 | 2 | 3.5 | 0 | 1 | | |
| 4 | 3 | 137995 | DV | 33 | 28 | 2 | 7 | 0 | 6 | 1 | | | 5 | 1 | 2 | 1 | 9 | 15 | 30 | 3 | 57 | 2 | 2 | 2 | 0 | 2 | 2 | 3.7 | 0 | 2 | | |
| 5 | 4 | 138849 | SKK | 32 | 27 | 1 | 1 | 14 | 4 | 1 | | | 3 | 1 | 1 | 1 | 10 | 14 | 27 | 2 | 51 | 2 | 2 | 2 | 0 | 2 | 2 | 3.5 | 2.5 | 2 | | |
| 6 | 5 | 142712 | LS | 24 | 21 | 2 | 2 | 15 | 7 | 2 | | | 3 | 1 | 2 | 1 | 10 | 13 | 31 | 2 | 54 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 3.5 | 0.3 | 1 | |
| 7 | 6 | 143202 | SSS | 31 | 26 | 2 | 4 | 10 | 7 | 2 | | | 3 | 2 | 2 | 1 | 9 | 11 | 20 | 3 | 40 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 3.3 | 1.3 | 1 | |
| 8 | 7 | 143256 | MSS | 26 | 21 | 1 | 4 | 8 | 3 | 1 | | | 5 | 1 | 1 | 1 | 21 | 21 | 38 | 3 | 80 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3.5 | 0.8 | 1 | |
| 9 | 8 | 167835 | HSK | 23 | 21 | 1 | 3 | 14 | 7 | 2 | | | 3 | 2 | 1 | 1 | 9 | 19 | 30 | 3 | 58 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 1.7 | 1 | |
| 10 | 9 | 170351 | TSM | 44 | 42 | 2 | 4 | 10 | 7 | 2 | 2 | | 3 | 2 | 2 | 1 | 7 | 14 | 26 | 3 | 47 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 3.5 | 1 | 2 | |
| 11 | 10 | 173521 | PNR | 40 | 38 | 2 | 2 | 15 | 7 | 2 | | | 3 | 2 | 2 | 1 | 7 | 9 | 22 | 3 | 38 | 2 | 2 | 2 | 2 | 2 | 2 | 3.7 | 1.7 | 0 | | |
| 12 | 11 | 176932 | SRR | 36 | 35 | 2 | 2 | 15 | 7 | 2 | | | 3 | 2 | 2 | 1 | 7 | 15 | 20 | 2 | 42 | 2 | 2 | 2 | 2 | 2 | 2 | 3.5 | 2.5 | 2 | | |
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| 15 | 14 | 179125 | VRR | 40 | 38 | 2 | 4 | 10 | 7 | 2 | | | 5 | 1 | 2 | 1 | 8 | 22 | 35 | 3 | 65 | 2 | 2 | 2 | 2 | 2 | 2 | 3.5 | 0.5 | 9 | | |
| 16 | 15 | 180461 | HSP | 20 | 19 | 1 | 2 | 15 | 7 | 2 | | | 3 | 2 | 2 | 1 | 10 | 20 | 34 | 3 | 64 | 2 | 2 | 2 | 2 | 2 | 2 | 3.5 | 1 | 3 | | |
| 17 | 16 | 143899 | SR | 28 | 23 | 1 | 1 | 16 | 7 | 2 | | | 3 | 1 | 1 | 1 | 9 | 14 | 35 | 4 | 58 | 2 | 2 | 2 | 0 | 2 | 2 | 2.3 | 1 | 3 | | |
| 18 | 17 | 144229 | HR | 21 | 17 | 1 | 3 | 12 | 7 | 2 | | | 5 | 1 | 1 | 1 | 17 | 24 | 35 | 5 | 76 | 3 | 2 | 2 | 2 | 0 | 2 | 2 | 3.3 | 0 | 1 | |
| 19 | 18 | 144615 | HD | 25 | 21 | 2 | 3 | 12 | 7 | 2 | | | 3 | 1 | 2 | 1 | 14 | 18 | 33 | 3 | 65 | 2 | 0 | 2 | 0 | 1 | 2 | 2 | 2.7 | 0.5 | 1 | |
| 20 | 19 | 144816 | JM | 50 | 46 | 2 | 4 | 8 | 6 | 1 | | | 3 | 2 | 2 | 3 | 15 | 25 | 52 | 4 | 92 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 3 | 2 | |
| 21 | 20 | 145489 | SCCK | 34 | 30 | 1 | 3 | 13 | 7 | 2 | | | 3 | 1 | 2 | 1 | 7 | 10 | 20 | 1 | 37 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 0 | 0 | |
| 22 | 21 | 152524 | JPM | 35 | 30 | 1 | 2 | 17 | 3 | 2 | | | 3 | 2 | 1 | 2 | 17 | 20 | 28 | 4 | 65 | 2 | 0 | 2 | 2 | 2 | 0 | 2 | 2.7 | 0.5 | 3 | |
| 23 | 22 | 150521 | KSS | 30 | 25 | 2 | 4 | 8 | 6 | 1 | | | 5 | 1 | 2 | 1 | 18 | 22 | 33 | 3 | 73 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 0 | 3 | | |
| 24 | 23 | 150014 | LGG | 34 | 30 | 1 | 4 | 10 | 5 | 1 | | | 3 | 1 | 1 | 1 | 13 | 15 | 27 | 3 | 55 | 2 | 2 | 2 | 2 | 2 | 2 | 3.5 | 1.2 | 2 | | |
| 25 | 24 | 149665 | GKK | 44 | 40 | 2 | 5 | 5 | 7 | 2 | | | 3 | 2 | 2 | 1 | 7 | 16 | 24 | 2 | 47 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 1.2 | 1 | | |
| 26 | 25 | 149100 | MJW | 34 | 30 | 1 | 3 | 12 | 3 | 1 | | | 3 | 1 | 1 | 1 | 20 | 17 | 38 | 4 | 75 | 3 | 2 | 2 | 2 | 2 | 2 | 3.5 | 2 | 0 | | |
| 27 | 26 | 148725 | SK | 24 | 20 | 1 | 4 | 10 | 6 | 1 | | | 5 | 1 | 1 | 1 | 7 | 10 | 22 | 3 | 39 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1.7 | 2 | | |
| 28 | 27 | 148235 | LM | 42 | 37 | 2 | 4 | 10 | 7 | 2 | | | 3 | 1 | 2 | 1 | 14 | 16 | 32 | 5 | 62 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 3.7 | 0 | 2 | |
| 29 | 28 | 147810 | JA | 25 | 23 | 2 | 4 | 8 | 6 | 1 | | | 5 | 1 | 4 | 1 | 18 | 17 | 29 | 3 | 64 | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 2.7 | 0 | 1 | |
| 30 | 29 | 147435 | ASM | 32 | 28 | 2 | 2 | 17 | 2 | 2 | | | 3 | 2 | 1 | 2 | 25 | 25 | 35 | 3 | 85 | 3 | 2 | 2 | 2 | 0 | 2 | 2 | 3.2 | 0 | 1 | |
| 31 | 30 | 147344 | NMM | 52 | 48 | 2 | 4 | 10 | 7 | 2 | | | 3 | 1 | 2 | 2 | 9 | 12 | 21 | 2 | 42 | 2 | 2 | 2 | 2 | 2 | 2 | 3.5 | 1.5 | 1 | | |
| 32 | 31 | 153545 | ACC | 54 | 50 | 2 | 7 | 0 | 6 | 1 | | | 5 | 1 | 2 | 1 | 7 | 16 | 32 | 3 | 55 | 2 | 2 | 2 | 2 | 2 | 2 | 3.2 | 1.7 | 4 | | |
| 33 | 32 | 127708 | SDD | 26 | 20 | 2 | 2 | 15 | 7 | 2 | | | 3 | 2 | 2 | 1 | 10 | 13 | 32 | 3 | 55 | 2 | 2 | 2 | 1 | 2 | 2 | 3.5 | 1.5 | 2 | | |
| 34 | 33 | 128723 | SSK | 29 | 23 | 2 | 4 | 8 | 7 | 2 | | | 5 | 2 | 2 | 1 | 24 | 22 | 36 | 4 | 82 | 3 | 2 | 2 | 2 | 1 | 0 | 2 | 0.3 | 0 | 0 | |
| 35 | 34 | 153966 | SPR | 22 | 19 | 2 | 4 | 10 | 7 | 2 | | | 5 | 1 | 1 | 1 | 10 | 15 | 28 | 3 | 53 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 0.8 | 1 | |
| 36 | 35 | 155347 | RRR | 54 | 51 | 2 | 5 | 5 | 6 | 1 | | | 5 | 1 | 2 | 1 | 14 | 15 | 27 | 1 | 56 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | |
| 37 | 36 | 155579 | LPP | 24 | 20 | 2 | 5 | 7 | 7 | 2 | | | 5 | 1 | 2 | 1 | 11 | 14 | 22 | 2 | 472 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 3.2 | 1.5 | 2 | |

| Z12 = 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | | |
| 36 | 35 | 155347 | RRR | 54 | 51 | 2 | 5 | 5 | 6 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | 36 | 155579 | LPP | 24 | 20 | 2 | 5 | 7 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 37 | 146312 | SE | 33 | 29 | 2 | 4 | 8 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | 38 | 135114 | SSS | 24 | 18 | 2 | 3 | 12 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 39 | 163309 | NS | 28 | 26 | 2 | 4 | 8 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | 40 | 162320 | PAA | 31 | 28 | 2 | 4 | 10 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | 41 | 161758 | RS | 31 | 28 | 2 | 5 | 7 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | 42 | 182924 | MMM | 30 | 29 | 1 | 2 | 17 | 4 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | 43 | 185121 | CSK | 42 | 41 | 1 | 7 | 0 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | 44 | 160995 | SVV | 50 | 47 | 1 | 2 | 17 | 3 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | 45 | 160254 | GKY | 35 | 32 | 2 | 4 | 8 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | 46 | 145536 | SKC | 30 | 26 | 2 | 4 | 9 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | 47 | 160218 | APR | 42 | 39 | 2 | 5 | 7 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | 48 | 160059 | SV | 28 | 25 | 1 | 4 | 9 | 5 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 49 | 106408 | PGG | 28 | 18 | 1 | 3 | 12 | 3 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | 50 | 142693 | JRR | 37 | 32 | 2 | 5 | 6 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 | 51 | 107985 | BVM | 38 | 29 | 1 | 3 | 14 | 3 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | 52 | 19381 | SR | 34 | 27 | 1 | 4 | 9 | 6 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | 53 | 118672 | PV | 35 | 28 | 2 | 7 | 0 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | 54 | 117908 | BN | 26 | 19 | 2 | 3 | 12 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | 55 | 117907 | PD | 49 | 41 | 1 | 1 | 20 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 57 | 56 | 117779 | MPR | 42 | 35 | 2 | 7 | 0 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 58 | 57 | 111111 | SGG | 36 | 27 | 1 | 2 | 15 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 59 | 58 | 117627 | SMK | 51 | 44 | 2 | 6 | 4 | 7 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 59 | 166013 | VLS | 55 | 53 | 2 | 7 | 0 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | 60 | 165078 | BAS | 50 | 48 | 1 | 5 | 6 | 6 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | 61 | 173493 | SKK | 26 | 24 | 2 | 4 | 10 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | 62 | 163780 | PTT | 30 | 28 | 2 | 4 | 8 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 63 | 130830 | ET | 44 | 38 | 2 | 4 | 10 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 65 | 64 | 146207 | MAA | 27 | 23 | 2 | 4 | 10 | 6 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | 65 | 105338 | KSS | 57 | 48 | 1 | 3 | 12 | 3 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 67 | 66 | 137931 | RMVS | 27 | 22 | 2 | 2 | 14 | 6 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 68 | 67 | 74614 | VS | 45 | 30 | 2 | 3 | 12 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | 68 | 104520 | VR | 26 | 17 | 1 | 2 | 15 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 70 | 69 | 118419 | ARIV | 43 | 36 | 2 | 3 | 12 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 71 | 70 | 144566 | ASS | 35 | 31 | 2 | 4 | 10 | 6 | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 72 | 71 | 153857 | KMM | 27 | 14 | 2 | 4 | 9 | 7 | 2 | | | | | | | | | | | | | | | | | | | | | | | | |

| | | Z12 = 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | | |
| 67 | 66 | 137931 | RMVS | 27 | 22 | 2 | 2 | 14 | 6 | 1 | | | 3 | 2 | 4 | 3 | 12 | 14 | 32 | 1 | 58 | 2 | 2 | 2 | 1 | 0 | 1 | 2 | 3.5 | 0.5 | 0 | 2 | 2 | | |
| 68 | 67 | 74614 | VS | 45 | 30 | 2 | 3 | 12 | 7 | 2 | | | 3 | 1 | 2 | 1 | 7 | 13 | 23 | 1 | 43 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 3.5 | 1 | 2 | 2 | 2 | | |
| 69 | 68 | 104520 | VR | 26 | 17 | 1 | 2 | 15 | 7 | 2 | | | 3 | 1 | 1 | 1 | 8 | 21 | 31 | 2 | 60 | 2 | 2 | 2 | 0 | 2 | 2 | 4 | 2 | 0 | 1 | 2 | | | |
| 70 | 69 | 118419 | ARIV | 43 | 36 | 2 | 3 | 12 | 7 | 2 | | | 3 | 1 | 2 | 1 | 7 | 13 | 34 | 6 | 54 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1.5 | 1 | 2 | 2 | | |
| 71 | 70 | 144566 | ASS | 35 | 31 | 2 | 4 | 10 | 6 | 1 | | | 5 | 1 | 2 | 1 | 7 | 8 | 19 | 1 | 34 | 2 | 1 | 1 | 2 | 1 | 0 | 2 | 1.7 | 2 | 2 | 2 | 2 | | |
| 72 | 71 | 153857 | KMM | 27 | 14 | 2 | 4 | 9 | 7 | 2 | | | 5 | 1 | 2 | 1 | 9 | 11 | 25 | 2 | 45 | 2 | 2 | 2 | 0 | 1 | 2 | 2 | 4 | 0 | 1 | 2 | 2 | | |
| 73 | 72 | 155744 | SHYAM | 37 | 34 | 2 | 4 | 10 | 7 | 2 | | | 3 | 1 | 2 | 1 | 10 | 13 | 26 | 1 | 49 | 2 | 2 | 2 | 2 | 2 | 2 | 2.5 | 0 | 2 | 2 | 2 | 2 | | |
| 74 | 73 | 126934 | RVISH | 31 | 25 | 2 | 3 | 12 | 7 | 2 | | | 3 | 1 | 2 | 1 | 7 | 9 | 20 | 2 | 36 | 2 | 2 | 2 | 1 | 1 | 2 | 3.2 | 0.7 | 2 | 2 | 2 | 2 | | |
| 75 | 74 | 125892 | SSIVA | 27 | 20 | 1 | 3 | 12 | 3 | 1 | | | 3 | 1 | 1 | 1 | 9 | 17 | 22 | 2 | 48 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 2.5 | 2 | 1 | 2 | | |
| 76 | 75 | 138644 | HElan | 31 | 27 | 2 | 3 | 12 | 7 | 2 | | | 3 | 1 | 2 | 1 | 7 | 24 | 55 | 2 | 86 | 3 | 2 | 2 | 2 | 0 | 2 | 2 | 3.5 | 1.5 | 2 | 1 | 0 | | |
| 77 | 76 | 156689 | KVC | 46 | 43 | 2 | 4 | 10 | 7 | 2 | | | 3 | 2 | 2 | 1 | 7 | 19 | 22 | 1 | 48 | 2 | 0 | 1 | 0 | 0 | 2 | 1 | 4 | 0.5 | 2 | 2 | 2 | | |
| 78 | 77 | 140436 | KSETTU | 33 | 28 | 1 | 5 | 5 | 5 | 1 | | | 5 | 1 | 2 | 1 | 7 | 12 | 18 | 1 | 37 | 2 | 1 | 1 | 2 | 2 | 2 | 4 | 4 | 1 | 1 | 1 | 1 | | |
| 79 | 78 | 127139 | VNAT | 46 | 40 | 2 | 7 | 0 | 7 | 2 | | | 5 | 1 | 2 | 1 | 12 | 20 | 38 | 5 | 70 | 2 | 0 | 2 | 1 | 2 | 2 | 3.2 | 0.5 | 2 | 2 | 1 | 1 | | |
| 80 | 79 | 164366 | DKUP | 44 | 42 | 2 | 5 | 5 | 7 | 2 | | | 5 | 1 | 2 | 1 | 12 | 23 | 31 | 3 | 66 | 2 | 0 | 1 | 2 | 1 | 2 | 3.7 | 2.2 | 2 | 2 | 2 | 2 | | |
| 81 | 80 | 122412 | PET | 40 | 33 | 2 | 4 | 8 | 6 | 1 | | | 5 | 2 | 1 | 1 | 12 | 23 | 29 | 3 | 64 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2.5 | 1.2 | 3 | 2 | 2 | | |
| 82 | 81 | 132255 | PKUM | 30 | 25 | 2 | 3 | 12 | 7 | 2 | | | 3 | 2 | 2 | 1 | 21 | 19 | 38 | 1 | 78 | 3 | 2 | 2 | 0 | 2 | 2 | 0 | 3.5 | 1 | 1 | 1 | 1 | | |
| 83 | 82 | 114541 | SPAL | 45 | 37 | 2 | 7 | 0 | 7 | 2 | | | 5 | 1 | 2 | 1 | 17 | 18 | 38 | 1 | 73 | 2 | 2 | 2 | 2 | 2 | 2 | 2.5 | 0.5 | 2 | 2 | 0 | 0 | | |
| 84 | 83 | 99996 | RKE | 45 | 35 | 1 | 5 | 6 | 4 | 1 | | | 5 | 1 | 2 | 1 | 7 | 15 | 26 | 3 | 48 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 3.7 | 1.2 | 1 | 2 | 2 | | |
| 85 | 84 | 167248 | SDHA | 24 | 22 | 2 | 4 | 8 | 7 | 2 | | | 3 | 2 | 1 | 1 | 8 | 21 | 29 | 6 | 58 | 2 | 0 | 0 | 0 | 1 | 2 | 2 | 0.7 | 0.5 | 1 | 2 | 1 | | |
| 86 | 85 | 156846 | MPAN | 40 | 37 | 2 | 6 | 2 | 7 | 2 | | | 5 | 1 | 2 | 1 | 7 | 16 | 22 | 1 | 45 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 4 | 4 | 2 | 2 | 2 | | |
| 87 | 86 | 70557 | MDEE | 43 | 27 | 2 | 3 | 12 | 7 | 2 | | | 3 | 1 | 2 | 2 | 14 | 16 | 38 | 5 | 68 | 2 | 2 | 2 | 2 | 2 | 2 | 3.7 | 2 | 2 | 2 | 2 | 2 | | |
| 88 | 87 | 145081 | MSET | 32 | 28 | 1 | 3 | 12 | 3 | 1 | | | 5 | 1 | 4 | 1 | 22 | 19 | 30 | 3 | 71 | 2 | 0 | 2 | 2 | 2 | 2 | 4 | 2.2 | 2 | 2 | 2 | 2 | | |
| 89 | 88 | 160059 | SVEN | 28 | 25 | 1 | 4 | 8 | 5 | 1 | | | 5 | 1 | 1 | 2 | 17 | 20 | 34 | 3 | 71 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 1.5 | 2 | 2 | 2 | 2 | | |
| 90 | 89 | 153368 | SDG | 41 | 37 | 2 | 3 | 13 | 1 | 1 | | | 3 | 2 | 2 | 1 | 11 | 21 | 29 | 2 | 61 | 2 | 2 | 2 | 2 | 2 | 2 | 3.7 | 4 | 0 | 2 | 2 | 2 | | |
| 91 | 90 | 150202 | RCHA | 34 | 30 | 2 | 4 | 8 | 7 | 2 | | | 5 | 2 | 2 | 2 | 7 | 20 | 27 | 3 | 54 | 2 | 2 | 2 | 1 | 0 | 2 | 0 | 0 | 2 | 1 | 1 | 1 | | |
| 92 | 91 | 147157 | VRAM | 38 | 34 | 2 | 4 | 8 | 7 | 2 | | | 5 | 2 | 2 | 1 | 17 | 13 | 26 | 1 | 56 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 1 | 2 | 2 | 2 | 2 | | |
| 93 | 92 | 139357 | RKG | 28 | 23 | 1 | 4 | 10 | 6 | 1 | | | 5 | 1 | 1 | 1 | 15 | 19 | 42 | 4 | 76 | 3 | 2 | 2 | 2 | 2 | 2 | 3.2 | 3.5 | 1 | 2 | 2 | 2 | | |
| 94 | 93 | 148566 | SMA | 33 | 29 | 1 | 3 | 14 | 5 | 1 | | | 3 | 2 | 1 | 1 | 11 | 29 | 29 | 1 | 69 | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 4 | 2.5 | 2 | 2 | 2 | 2 | |
| 95 | 94 | 156697 | AANN | 48 | 45 | 1 | 6 | 4 | 6 | 1 | | | 5 | 1 | 2 | 1 | 10 | 23 | 22 | 1 | 55 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 3 | 3 | 2 | 2 | 2 | 2 | |
| 96 | 95 | 106146 | PAVK | 29 | 20 | 1 | 2 | 15 | 5 | 1 | | | 5 | 1 | 1 | 1 | 11 | 11 | 20 | 1 | 42 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 2 | 2 | 2 | 2 | |
| 97 | 96 | 107371 | SPAR | 33 | 24 | 1 | 3 | 12 | 6 | 1 | | | 5 | 1 | 4 | 1 | 20 | 18 | 32 | 3 | 70 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2.5 | 1.2 | 3 | 1 | 2 | 2 | |
| 98 | 97 | 174066 | SEE | 44 | 42 | 2 | 5 | 5 | 7 | 1 | | | 5 | 1 | 2 | 1 | 13 | 21 | 36 | 3 | 70 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2.2 | 0 | 1 | 2 | 1 | 1 | |
| 99 | 98 | 160472 | GUL | 39 | 36 | 2 | 1 | 17 | 7 | 2 | | | 3 | 2 | 2 | 1 | 7 | 8 | 17 | 1 | 32 | 2 | 1 | 1 | 1 | 2 | 2 | 3.5 | 3 | 1 | 2 | 2 | 2 | 2 | |
| 100 | 99 | 165117 | VNAR | 31 | 29 | 1 | 7 | 0 | 5 | 1 | | | 5 | 1 | 1 | 1 | 15 | 38 | 42 | 1 | 93 | 3 | 0 | 0 | 0 | 2 | 2 | 2 | 4 | 1 | 2 | 1 | 0 | 0 | |
| 101 | 100 | 165461 | BKRI | 33 | 31 | 1 | 4 | 8 | 5 | 1 | | | 5 | 1 | 4 | 1 | 9 | 22 | 29 | 1 | 60 | 2 | 1 | 1 | 2 | 2 | 0 | 2 | 4 | 4 | 2 | 2 | 2 | 2 | |
| 102 | 101 | 166461 | KVS | 23 | 21 | 1 | 2 | 20 | 7 | 1 | | | 3 | 2 | 1 | 1 | 9 | 19 | 32 | 1 | 80 | 2 | 1 | 1 | 0 | 2 | 2 | 2 | 4 | 0 | 2 | 2 | 2 | 2 | |
| 103 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Appendix No.1

Participant Information Sheet

“Attitude to medication and insight in patients with schizophrenia”

My name is Dr. Subhalakshmi T.P. and I am doing a research on **“Attitude to medication and insight in patients with schizophrenia”**. The research will be done in Department of psychiatry ,CMC,Vellore.

Patients’ insight in to their illness has been shown in some studies to affect their attitude to treatment and ultimately the outcome of the illness as well.

I am aiming to find out this relationship among the patients who attend the outpatient department here at the Mental Health centre for a study as part of my education. I would like to request you to answer some questions related to your illness. I will also be collecting information regarding your illness from the case record kept in the hospital.

Your information will not be revealed to anyone and all information about you and your treatment will be kept confidential. This study is not likely to be of any direct benefit to you.

You have every right to refuse to take part in this study. Your treatment will not be affected by this.

If you have any doubts you can contact me at 04162284520 , department of psychiatry , CMC, Vellore. Email: subhalakshmitp@yahoo.com

நோயாளியின் தகவல் படிவம்

ஸ்கிசோ:ப்ரினியா நோயாளிகளுக்கு மருந்து மற்றும் நுண்ணறிவு தேவையின் அணுகுமுறை

என் பெயர். டாக்டர் டி.பி. சுப்பலட்சுமி நான் “ ஸ்கிசோ:ப்ரினியா நோயாளிகளுக்கு மருந்து மற்றும் நுண்ணறிவு வேண்டுதலி அணுகுமுறை ” பற்றி ஆய்வு செய்து வருகிறேன். இந்த ஆய்வு வேலூர் சி.எம்.சி. மனநல துறையில் செய்யப்படும்.

நோயாளியின் உட்பார்வை அவர்களின் சிகிச்சையின் மனோபாவம் மற்றும் இதனால் சிகிச்சையின் முடிவையும் பாதிக்கும் என்று சில ஆய்வுகள் தெரிவிக்கின்றது.

இந்த நோயாளிகளைப் பற்றி ஒரு ஆய்வு மனநல மருந்து துறைக்கு வரும் புற நோயாளிகளை நான் ஆய்வு செய்யப்போகிறேன். இந்த ஆய்வு எனது படிப்பின் ஒரு பகுதி .

இந்த ஆய்வில் வரும் நோயாளிகளிடம் நான் சில நோய்களை பற்றி கேள்விகளை கேட்க நினைக்கிறேன் அதற்கு நீங்கள் பதில் கூற வேண்டும் என்று விரும்புகிறேன்.

உங்கள் நோய் பற்றிய விவரங்களையும் நான் மருத்துவ மனையில் உள்ள பதிவேடுகளில் இருந்து சேகரித்துக் கொள்வேன்.

உங்களைப் பற்றிய தகவல் யாருக்கும் வெளியிடப்பட மாட்டாது. உங்கள் மருத்துவ விவரம் இரகசியமாக வைக்கப்படும். இந்த ஆய்வினால் உங்களுக்கு நேரடியாக பயன் எதுவும் இருக்காது. இந்த ஆய்வில் பங்கேற்க மற்றும் மறுக்க உங்களுக்கு எல்லா உரிமைகளும் உண்டும். அதனால் உங்கள் மருத்துவம் பாதிக்காது.

உங்களுக்கு ஏதாவது ஐயம் இருந்தால் வேலூர் சி.எம்.சி, மனநல மருத்துவத் துறை தொலைபேசி எண். 04162284520 இல் என்னிடம் தொடர்பு கொள்ளலாம்.

மின்னஞ்சல்: subhlakshmitp@yahoo.com

Appendix No.2

A. SOCIO DEMOGRAPHIC VARIABLES:

Name

Age at present

Age at point of contact

Sex

Employment

Family Income

Education

Residence Rural / Urban

Marital Status

Socioeconomic status

Profession

Religion

B. CLINICAL VARIABLES

1. Psychopathology:

PANSS

Positive score

Negative score

General psychopathology

Total score

Level

- a. Absence
- b. Mild
- c. Moderate
- d. Marked
- e. Severe

2. Insight

Total score

Level

Poor insight = 15

Moderate = 15.1 – 24.9

Good insight = More than 25

3. Drug attitude inventory:

Positive score = favorable attitude

Negative score = unfavorable attitude

Total score

4. Morisky scale:

0

1 or more than 1

C. CHART REVIEW:

1. Compliance

Over 1 year

Throughout illness

2. Duration of untreated psychosis

3. Age of onset

4. Diagnosis subtype / course

5. Medical co morbidity

6. Substance use

7. Family history of psychosis or mood or other

Appendix No.3

CONSENT FORM

In signing the document I am giving consent to be interviewed by Dr. T. P. Subhalakshmi, post graduate student in Psychiatry at the Mental Health Centre, Bagayam. I understand that I will be part of the research study on "Attitude to Medication and insight in patients with schizophrenia".

I further understand that I will be asked a few questions regarding my health status and my responses to that will not affect my treatment or other related services. My participation will be voluntary and granted freely. I also understand that I am free to revoke my permission at any time during the study without affecting my treatment.

I am assured that the information that will be collected from me will be used only for this study purpose and it will be kept confidential.

I am informed that the results of this research will be given to me if I ask for them.

Date

Signature of the participant.

Name of the participant.

ஒப்புதல் படிவம்

நான் இந்த படிவத்தில் கையெழுத்திடுவதின் மூலம் டாக்டர். டி.பி. சுப்பலட்சுமி எம்.டி.(மனநலம்) மாணவி மேற்கொள்ளும் நோக்கானலில் பங்கு கொள்ள சம்மதிக்கிறேன். ஸ்கிசோ:ப்ரினியா நோயாளிகளுக்கு மருந்து மற்றும் நுண்ணறிவு தேவையின் அணுகுமுறை ஆய்வில் நானும் பங்கு கொள்கிறேன் என்பதை அறிந்திருக்கிறேன்.

என்னிடம் மனநிலை பற்றி கேள்விகள் கேட்கப்படும் என்பதை அறிந்து இந்த ஆராய்ச்சியில் முழு மனதுடன் பங்கேற்கிறேன். நான் அளிக்கும் பதிலுக்கு அளிக்கப்படும் மருத்துவ சேவையில் எந்தவிதமான மாற்றத்தையும் ஏற்படுத்தாது.

இந்த ஆய்வில் பங்கேற்க மற்றும் மறுக்க எனக்கு உரிமை உண்டும். அதனால் உங்கள் மருத்துவம் பாதிக்காது.

என்னிடமிருந்து சேகரிக்கப்படும் தகவல்கள் இந்த ஆராய்ச்சிக்காக மட்டுமே பயன்படுத்தப்படும் மற்றும் மற்றவர்கள் அறிந்துகொள்ள முடியாத நிலையில் பாதுகாக்கப்படும்.

இந்த ஆய்வின் முடிவு எனக்கு தேவைப்படும் பொழுது கிடைக்கும் என்று எனக்கு தெரிவும்.

நாள்:

கையொப்பம்

பெயர்

APPENDIX C

POSITIVE AND NEGATIVE SYMPTOM SCALE (PANSS)

Severity rating key

- 1 = Absent
- 2 = Minimal
- 3 = Mild
- 4 = Moderate
- 5 = Moderately severe
- 6 = Severe
- 7 = Extreme

1. POSITIVE SUBSCALE

- _____ P 1. Delusions
- _____ P 2. Conceptual disorganization
- _____ P 3. Hallucinatory behaviour
- _____ P 4. Excitement
- _____ P 5. Grandiosity
- _____ P 6. Suspiciousness / persecution
- _____ P 7. Hostility

2. NEGATIVE SUBSCALE

- _____ N 1. Blunted affect
- _____ N 2. Emotional withdrawal
- _____ N 3. Poor rapport
- _____ N 4. Passive / apathetic social withdrawal
- _____ N 5. Difficulty in abstract thinking
- _____ N 6. Lack of spontaneity and flow of conversation
- _____ N 7. Stereotyped thinking

3. GENERAL PSYCHOPATHOLOGY SUBSCALE

- _____ G 1. Somatic concern
- _____ G 2. Anxiety
- _____ G 3. Guilt feeling
- _____ G 4. Tension
- _____ G 5. Mannerism and posturing
- _____ G 6. Depression
- _____ G 7. Motor retardation
- _____ G 8. Un co-operativeness
- _____ G 9. Unusual thought content
- _____ G 10. Disorientation
- _____ G 11. Poor attention
- _____ G 12. Lack of judgement and insight
- _____ G 13. Disturbance of volition
- _____ G 14. Poor impulse control
- _____ G 15. Pre occupation
- _____ G 16. Active social avoidance

APPENDIX D(I)

MORISKY SCALE

| "Thinking about the medications PRESCRIBED to you by your doctor(s), please answer the following questions." | | |
|---|-----------|------------|
| | NO | YES |
| Do you ever forget to take your medications? | | |
| Are you careless at times about taking your medications? | | |
| When you feel better, do you sometimes stop taking your medications? | | |
| Sometimes if you feel worse when you take your medications, do you stop taking them? | | |

APPENDIX D(II)

மருத்துவர் தங்களுக்கு பரிந்துரைத்த மாத்திரையை நினைவில் கொண்டு
பிள்வரும் கேள்விகளுக்கு பதிலளியுங்கள்

| கேள்விகள் | ஆம் | இல்லை |
|--|-----|-------|
| நீங்கள் மருந்துகளை உட்கொள்ள எப்பொழுதாவது மறந்து இருக்கிறீர்களா? | | |
| நீங்கள் மருந்து உட்கொள்வதில் எப்பொழுதாவது கவனக்குறைவோடு இருந்ததுண்டா? | | |
| நீங்கள் நலமாக இருப்பது போல் உணரும் வேளைகளில் சிலசமயம் மருந்து உட்கொள்வதை நிறுத்தியது உண்டா? | | |
| சில நேரங்களில் மருந்து உட்கொள்வதினால் ஏற்படுகிற அசௌகரியத்தால் மாத்திரை உட்கொள்வதை நிறுத்தியது உண்டா? | | |

APPENDIX F (I)

DRUG ATTITUDE INVENTORY (DAI-10)

Read each statement and decide whether it is true as applied to you or false as applied to you.

| | | |
|-----|--|-------|
| 1. | For me, the good things about medication outweigh the bad | T / F |
| 2. | I feel strange, "doped up", on medication | T / F |
| 3. | I take medications of my own free choice | T / F |
| 4. | Medications make me feel more relaxed | T / F |
| 5. | Medication makes me feel tired and sluggish | T / F |
| 6. | I take medication only when I feel ill | T / F |
| 7. | I feel more normal on medication | T / F |
| 8. | It is unnatural for my mind and body to be controlled by medications | T / F |
| 9. | My thoughts are clearer on medication | T / F |
| 10. | Taking medication will prevent me from having a breakdown | T / F |

APPENDIX F (II)

மருந்து குறித்த மனப்பான்மை (DAI)

கீழே கொடுக்கப்பட்டுள்ள வாக்கியங்களில் சரி அல்லது தவறு என குறிப்பிடுக :

| | கேள்விகள் | ஆம் | இல்லை |
|----|---|-----|-------|
| 1 | மருந்துகளால் உண்டாகும் தீமைகளைக் காட்டிலும் நன்மைகளையே நான் அதிகமாக எண்ணுகிறேன். | | |
| 2 | மருந்துகளினால் போதையேற்றப்பட்டதைப் போலவும் விசித்திரமாகவும் உணர்கிறேன். | | |
| 3 | நான் எனது சுயவிருப்பத்தின் படியே மருந்து உட்கொள்கிறேன். | | |
| 4 | மருந்துகள் எனக்கு பாரமற்ற உணர்வை அளிக்கிறது. | | |
| 5 | மருந்துகள் சோர்வு மற்றும் சோம்பல் உணர்வைக் கொடுக்கிறது. | | |
| 6 | சுகவீனமாக உணரும்போது மட்டுமே நான் மருந்து உட்கொள்ளுவேன். | | |
| 7 | மருந்து எடுத்தால் நான் வழக்கமான நிலையில் இருப்பதுபோல் உணர்கிறேன். | | |
| 8 | எனது மனதையும், உடலையும் மருந்துகளினால் கட்டுப்படுத்துவதை விசித்திரமாக உணர்கிறேன். | | |
| 9 | மருந்து எடுத்துக் கொண்டால் எனது சிந்தனைகள் தெளிவாக இருக்கிறது. | | |
| 10 | மருந்து எடுப்பது மனமுறிவு ஏற்படுவதைத் தடுக்கிறது | | |

APPENDIX - E

SCHEDULE FOR THE ASSESSMENT OF INSIGHT (SAI-E)

1. Do you think you have been experiencing any emotional or psychological changes or difficulties?
 - a. Often (thought present most of the day, most days) = 2
 - b. Sometimes (thought present occasionally) = 1
 - c. Never (ask why doctors / others think so) = 0

2. "Do you think this means there is something wrong with you?" (For example, a nervous condition). If previous answer was "never" or "no" ask; "If the doctor(s) and / or others think you have something wrong with you even though you don't feel it yourself?"
 - a. Often (thought present most of the day, most days) = 2
 - b. Sometimes (thought present occasionally) = 1
 - c. Never (ask why doctors / others think so) = 0

3. "Do you think your condition amounts to a mental illness or mental disorder?"
 - a. Often (thought present most of the day, most days) = 2
 - b. Sometimes (thought present occasionally) = 1
 - c. Never (ask why doctors / others think so) = 0

4. "How do you explain your condition / disorder / illness?"
 - a. Reasonable account given based on plausible mechanisms (appropriate given social, cultural and educational background, e.g. excess stress, chemical imbalance, family history, etc.) 2
 - b. Confused account, or overheard explanation without adequate understanding or "don't know" = 1
 - c. Delusional or bizarre explanation = 0

- "Has your nervous / emotional / psychological mental / psychiatric condition (use patient's term) led to adverse consequences or problems in your life? (For example, conflict with others, neglect, financial or accommodation difficulties, irrational, impulsive or dangerous behaviour)
 - a. Yes (with example) = 2
 - b. Unsure (cannot give example or contradicts self) = 1
 - c. No = 0

6. "Do you think your..... condition (use patient's term) or the problem resulting from it warrants (needs) treatment?"

- | | | |
|---|---|---|
| a. Yes (with example) | = | 2 |
| b. Unsure (cannot give example or contradicts self) | = | 1 |
| c. No | = | 0 |

7. Pick the most prominent symptoms upto a maximum of 4. Then rate awareness of each symptoms out of 4 as below. (Interviewer to assess which symptoms to rate from previous interviews e.g. highest scoring on BPRS and / or from patient's current presentation).

- a. "Do you think that the belief... is not really / happening (could you be imagining things)?"
- b. Do you think the 'voices' you hear are actually real people talking, or is it something arising from your own mind?"
- c. "Have you been able to think clearly, or do your thoughts seem mixed up / confused? Is your speech jumbled?"
- d. "Would you say you have been more agitated / overactive / speeded up / withdrawn than usual?"
- e. "Are you aware of any problem with attention / concentration / memory?"
- f. "Have you a problem with doing what you intend / getting going / finished tasks / motivation?"

Symptom 1

Symptom 2

Symptom 3

Symptom 4

- | | | |
|--------------------------------------|---|---|
| Definitely (full awareness) | = | 4 |
| Probably (moderate awareness) | = | 3 |
| Unsure (sometimes yes, sometimes no) | = | 2 |
| Possibly (slight awareness) | = | 1 |
| Absolutely not (no awareness) | = | 0 |

Mean

Please add explanatory comments if appropriate.

C. Summary of compliance to treatment / therapy / medication

- | | | |
|--|---|---|
| a. Complete refusal | = | 1 |
| b. Partial refusal (e.g. refusing depot drugs or Accepting only the minimum dose) | = | 2 |
| c. Reluctant acceptance (accepting only because treatment is compulsory or questioning the need often e.g. every two days) | = | 3 |
| d. Occasional reluctance about treatment (questioning the need for treatment once a week) | = | 4 |
| e. Passive acceptance | = | 5 |
| f. Moderate participation (some knowledge of and Interest in treatment and no prompting needed to take the drugs) | = | 6 |
| g. Active participation (ready acceptance, and taking some responsibility for treatment) | = | 7 |

Mean

APPENDIX - F

1. நீங்கள் ஏதேனும் மனப்பாதிப்பு அல்லது மனநிறைவு படுத்த முடியாதவை போன்று அனுபவம் கொண்டு யோசித்ததுண்டா?
 1. பலமுறை நிறைய நாள்களில் சிந்திக்கும் ஆற்றல் தோன்றுதல் நிறைய நாள்களில் = 2
 2. சில சமயம் சிந்திக்கும் ஆற்றல் தற்செயலாக தோன்றுதல் = 1
 3. ஒரு போதும் மருத்துவரை ஏன் என்று கேளுங்கள் / மற்றவை என்னி = 0

2. நீங்கள் இதைப்பற்றி ஏதேனும் தவறு என்று நினைக்கிறீர்களா? சான்றுக்கு நரம்பு தளர்ச்சி இதற்கு முன்பு கேட்ட கேள்வி ஒரு போதும் அல்லது இல்லை அப்ப மருத்துவர் மற்றும் / அல்லது மற்றவர்கள் நீங்கள் ஏதேனும் மனக்கிளர்ச்சி கொண்டவை போன்ற அனுபவம் அல்லது மனநிறைவு படுத்த முடியாதவைப்போல் யோசித்தார்களா? நீங்கள் அப்படி நினைக்காவிட்டாலும்?
 1. பலமுறை நிறைய நாள் சிந்திக்கும் ஆற்றல் தோன்றுதல் நிறைய நாள்களில் = 2
 2. சில சமயம் சிந்திக்கும் ஆற்றல் தற்செயலாக தோன்றுதல் = 1
 3. ஒருபோதும் மருத்துவரை என்ன என்று கேளுங்கள் / மற்றவை என்ன = 0

3. நீங்கள் உங்களுடைய நிலைகளை மனக்குழப்பம் (அல்லது) மனநலமின்மை எதைச்சாரும்?
 1. பலமுறை நிறைய நாள் சிந்திக்கும் ஆற்றல் தோன்றுதல் நிறைய நாள்களில் = 2
 2. சில சமயம் சிந்திக்கும் ஆற்றல் தற்செயலாக தோன்றுதல் = 1
 3. ஒருபோதும் மருத்துவரை என்ன என்று கேளுங்கள் / மற்றவை என்ன = 0

4. உண்மையான தோற்றமளிக்கிற இயந்திரச் செயல்முறை அவை மதிப்பின் விவாதிக்கபின் இருக்கும். சுரியான சமூகம் நற்பண்பு மற்றும் கல்விஜ தகுதியின் பின்னனி சான்றுக்கு மிகுதியான வற்புறுத்தல் இரசாயணப்பொருள் நிலையில்லாமை குடும்ப கதை ஆகியவை
 1. காப்பமாக கருதுதல் அல்லது விளக்கமானவை தற்செயலாக்க கேள். தகுதியாக இல்லாமல். புரிந்துகொள்வது அல்லது தெரியாமல் இருப்பது = 1
 2. தவறான நம்பிக்கை மற்றும் புரியாத விளக்கம் = 9

5. உங்களுடைய நரம்பியல் மனத்தைச் சார்ந்த காரணங்களால் மனநோய் விளக்கவுரை நோயாளியின் விளக்கவுரை கேளுங்கள். தீங்கு விளைவிக்கக்கூடிய விளைவுகள் அல்லது உங்களுடைய வாழ்க்கையின் கொண்ட பிரச்சனைகள்? சான்றுக்கு மற்றவர்களிடம் சண்டை போடுவது புறக்கணிப்பது பணப்பிரச்சனை அல்லது கஷ்டமான குடியிருப்பு பகுத்தறிவுக்கு மாறான மனதிற்கு ஏற்படும் பாதிப்பு அல்லது அபயமான நடத்தைகள்?
 1. ஆமாம் என்றால் (சான்றுடன் விளக்க) = 2
 2. உறுதியாக இல்லாமல் (சான்று தர இயலாது அல்லது தானாகவே மறுத்தல் = 1

6. நீங்கள் உங்களுடைய நலமின்மை பற்றி யோசித்தது உண்டா நோயாளியின் பதிவை பயன்படுத்துங்கள் அல்லது பிரச்சனைக்கு சிகிச்சை செய்யவேண்டுமா?

1. ஆமாம் என்றால் (உண்மையாக தோற்றமளிக்க காரணத்துடன் எழுதுக) = 2
2. உறுதியாக இல்லாமல் (சான்றுதர இயலாது அல்லது தானாகவே மறுத்தல்) = 1
3. இல்லை = 0

7. மிகமுக்கியமான அடையாளத்தை மிக புதிய வகையான மிக அதிகமான நான்கை தேர்வு செய்யுங்கள். பின்பு உணர்கிற விகிதத்தை ஒவ்வொரு அடையாளத்தை நான்குக்கு மேல் உள்ளப்படி (பேட்டியர்கள்மதிப்பிடு என்ற அடையாளத்தின் விகிதம் முன்பு பேட்டியின்போது இருந்தது) சான்றுக்கு அதிக அளவு புள்ளிகள்

BPRS மற்றும் / அல்லது நோயாளியின் சமீபத்தில் சேர்ந்த அறிமுகம்

1. நீங்கள் ஒப்புக்கொள்ளுதலை யோசித்தீர்களா அவை உண்மையிலேயே இல்லாமல் / நிகழ்வதுபோல் உண்மையில்லாத ஒன்றை முடியும் என்று சொல்கிறார்கள்?
2. நீங்கள் மற்றவர்கள் பேசுவதை உண்மையிலே உண்மையான குரல் என்று நீங்கள் கேட்பதற்கு உண்டா அல்லது யோசித்தீர்களா? அல்லது உங்கள் மனதில் ஏதேனும் தோன்றுவதுபோல தானாகவே இருந்ததுண்டா?
3. நீங்கள் யோசிப்பது மிக தெளிவுடன் இருந்ததுண்டா? அல்லது நீங்கள் பார்ப்பதற்கு எண்ணங்கள் கலந்தவைபோல் இருப்பது / குழப்பம் அடைதல்? உங்கள் பேச்சுகள் தாறுமாறாக குழப்புதல்?
4. நீங்கள் அதிகலவில் உணர்ச்சி கிளறுதல் ஏற்பட்டது என்று சொல்ல முடியுமா / அதிக அளவின் கறுசறுப்பு / வேகமாகவும் / பழக்க மரபுரடையதை பின்வாங்குதல்

1. நீங்கள் ஏதேனும் பிரச்சனைப்பற்றி உணர்கிறதை கவனத்துடன் / ஒரே செயலுடன் / நினைவாற்றல்?

அறிகுறி 1 அடையாளம் அறிகுறி 2

அடையாளம்

அறிகுறி 3 அடையாளம் அறிகுறி 4

அடையாளம்

கண்டிப்பாக (முழு உணர்வுகள்) = 4

தோற்றமளிக்க கூடியது (அளவான உணர்வுகள்) = 3

தவறானமை (சில சமயம் உண்டு / சில சமயம் இல்லை) = 2

இருக்கக்கூடியவை முழுமையல்லாத உணர்வுகள் = 1

எல்லையற்றவை (உணர்வுகள் இல்லாமல்) = 0

8. எல்லா அறிகுறிகளுக்கு அனைத்து விகிதம் மேலே குறிப்பிட்டு இருக்கும் அதை குறைந்தபட்சம் 4க்கு மேல் இருக்கும் நோயாளிகளை கேளுங்கள் நீங்கள் எப்படி விளக்குவீர்கள் (பொய்யான நம்பிக்கை குரல்கள் கேட்பது தாறுமாறான நிலையை நிந்தனை குறைப்பாடு கொண்டு செலுத்துதல் ஆகியவை?)

| | |
|--|-----|
| என்னுடைய உடல் நலமின்மை பகுதி | = 4 |
| நரம்புகளைப் பாதிக்கின்ற சூழ்நிலை காரணமாக | = 3 |
| எதிர்விளையின் வற்புறுத்தல் / சோர்வு | = 2 |
| தவறான மன ஒன்றுக்கு மேற்பட்டவை | = 1 |
| சொல்லமுடியாமல் அல்லது தவறான நம்பிக்கை / விளக்கம் | = 0 |

9. நீங்கள் உங்களை மற்றவர்கள் நம்பவில்லை என்றால் எப்படி பாதிக்கப்படுவீர்கள் (நீங்கள் தவறான நம்பிக்கைப்பற்றி பேசும்போது அல்லது கற்பனை?) அவை நான் உடல்நலம் குன்றியபோது அவை எனக்கு தெரியும் = 4
நான் எனக்குள்ளே ஏதேனும் தவறாக இருக்கும் என்று ஆச்சியப்பட்டதுண்டு = 3
நான் குழப்பம் அடைந்தேன் மற்றும் நான் அவைப்பற்றி என்ன நினைப்பது என்று தெரியவில்லை = 2
நான் கவராமற்ற உறுதியான வெறுப்பு மற்றவர்கள் என்ன சொல்வதைக் கொண்டு = 1
அவர்கள் எல்லாம் பொய் சொல்கிறார்கள் = 0

சிகிச்சை / வியாதியின் சிகிச்சை / மருத்துவகலை - நோயாளியின் அடிப்படையான செலில் அவர்கள் கீழ்வரும் மூன்று பட்டியலை விகிதம் பின்வரும் (A-C)

A நோயாளிகள் சிகிச்சையை எப்படி ஏற்றுக்கொள்வார்கள் (எதிர்ப்பு காட்டாத ஒத்துக்கொள்ளுதல் உள்பட)
உலமுறை (சிகிச்சைக்காக அசாதாரணமான தேவைப்படுவது நிகழக்கூடும்) = 2
சிலசமயம் (சிகிச்சைக்காக கேள்விகள் வழக்கமாக தேவைப்படுவது நிகழக்கூடும்) = 1
ஒரு பொழுதும் (என்ன என்று கேள்) = 0
தயவு செய்து விளக்கமாக விமர்சம் இருந்தால் சேர்த்துக்கொள்ளுங்கள்

B நோயாளிகள் சிகிச்சையின் நேரம் தவறான மன பற்றி கேள்வி கேட்பார்களா?
பலமுறை (தகுதியற்ற வேண்டுகோள், மருத்துவக்கலையை நீக்குதல்) = 2
சில சமயம் (மறதி / குழப்பம் உண்டாகும் வகையில் கொண்டு வழக்கமான வேண்டுகோள் மட்டும் விகிதம் கூறுக) = 1
ஒரு பொழுதும் (மருத்துவரை கேளுங்கள் ஏன் என்று / மற்றவை ஏதேனும் இருந்தால்) = 0
தயவு செய்து விளக்கமான விமர்சம் தகுதியுடன் சேர்த்து கொள்ளுங்கள்