A STUDY ON FACTORS DETERMINING FUNCTIONAL REMISSION IN PATIENTS WITH SCHIZOPHRENIA

Dissertation submitted to

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY

CHENNAI

in partial fulfilment of the rules and regulations for award of the degree of

DOCTOR OF MEDICINE

BRANCH - XVIII (PSYCHIATRY)

THE TAMILNADU
DR. M.G.R. MEDICAL UNIVERSITY
CHENNAI, INDIA

APRIL 2017

CERTIFICATE

This is to certify that the dissertation titled, **"A STUDY ON FACTORS DETERMINING FUNCTIONAL REMISSION IN PATIENTS WITH SCHIZOPHRENIA"** is the bona fide work done by **Dr. T. MEROLIN JAYA SHEELA** from April, 2016 to July, 2016 and submitted to The Tamil Nadu Dr. M. G. R. Medical University in partial fulfilment of the rules and regulations for award of the degree of Doctor of Medicine Branch - XVIII (Psychiatry) examination to be held in April 2017.

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CERTIFICATE OF THE GUIDE

This is to certify that the dissertation titled, **"A STUDY ON FACTORS DETERMINING FUNCTIONAL REMISSION IN PATIENTS WITH SCHIZOPHRENIA"** is the original work **of Dr. T. MEROLIN JAYA SHEELA** done under my guidance from April, 2016 to July, 2016 and submitted to The Tamil Nadu Dr. M. G. R. Medical University in partial fulfilment of the rules and regulations for award of the degree of Doctor of Medicine Branch - XVIII (Psychiatry) examination to be held in April 2017.

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DECLARATION

I, **Dr. T. MEROLIN JAYA SHEELA,** solemnly declare that the dissertation titled, **"A STUDY ON FACTORS DETERMINING FUNCTIONAL REMISSION IN SCHIZOPHRENIA",** is a bona fide work done by me at the Institute of Mental Health, Madras Medical College, Chennai, during the period from April, 2016 to July, 2016 under the guidance and supervision of **Dr. P. Poorna Chandrika, M.D., D.C.h.**, Associate Professor, Institute of Mental Health, Madras Medical College, Chennai - 600 010.

The dissertation is submitted towards part fulfillment for M.D. Branch XVIII (Psychiatry) Examination to The Tamil Nadu Dr. M. G. R. Medical University.

Place: Chennai

Date: 29.09.2016 **Dr. T. MEROLIN JAYA SHEELA**

ACKNOWLEDGEMENTS

First and foremost, I would like to THANK and PRAISE the Almighty God for providing me this opportunity and granting me the strength and capability to undertake and complete this study.

Further, this thesis is made possible due to the guidance and cooperation of several people. I would therefore like to express my sincere gratitude and special thanks to all of them.

Firstly, I sincerely thank **Prof. Dr. M.K. Muralitharan, M.S., M.Ch.**, the Dean, Madras Medical College and **Prof. Dr. R. Vimala, M.D.**, Former Dean, Madras Medical College for giving me the opportunity to undertake this study.

I would like to express my special thanks to **Prof. Dr. A. Kalaichelvan, M.D., D.P.M.**, the Director, Institute of Mental Health and **Prof. Dr. R. Jeyaprakash, M.D., D.P.M.**, Former Director, Institute of Mental Health for giving me this opportunity to undertake this study in our Institute.

I would like to express my sincere gratitude and special thanks to my guide, **Dr. P. Poorna Chandrika, M.D., D.Ch.**, Associate Professor of Psychiatry, Institute of Mental Health, Kilpauk, Chennai for her valuable guidance and encouragement advice, brilliant comments and critical remarks and correction of this thesis. Further, I would like to express my sincere thanks to my co-guide **Dr. M. Priya Subhashini, M.D.**, Associate Professor of

Psychiatry, Institute of Mental Health, Kilpauk, for her valuable guidance and timely support throughout the study.

I would like to express my sincere thanks to all the Assistant Professors of the Institute of Mental Health, Kilpauk, Chennai for their support and guidance.

I would like to express my heartfelt thanks to my seniors, classmates, juniors and friends, **Dr. Akanksha Sonal, Dr. V. Mythili, Dr. S. Subhashini, Dr. Parvathy J. Ravikumar, Dr. R. Sudanthira, Dr. E. Sobana, Dr. P. Radhika, Dr. M. Ashwini** and others without their special support and cooperation this study would not have been possible. Besides, I would like to express my special thanks to all the well wishers for being a constant source of inspiration.

I would also like to express my sincere thanks to all the patients for their voluntary support and co-operation by participating in this study.

Last but not the least, I would like to express my thanks to my father, mother, brothers and husband for their encouragement, support, cooperation and assistance throughout this study

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To
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Dear Dr.T.Merolin Jaya Sheela,

The Institutional Ethics Committee has considered your request and approved your study titled **" A STUDY ON THE FACTORS DETERMINING FUNCTIONAL REMISSION IN PATIENTS WITH SCHIZOPHRENIA" NO. 15032016.**

The following members of Ethics Committee were present in the meeting hold on **05.04.2016** conducted at Madras Medical College, Chennai 3

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We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

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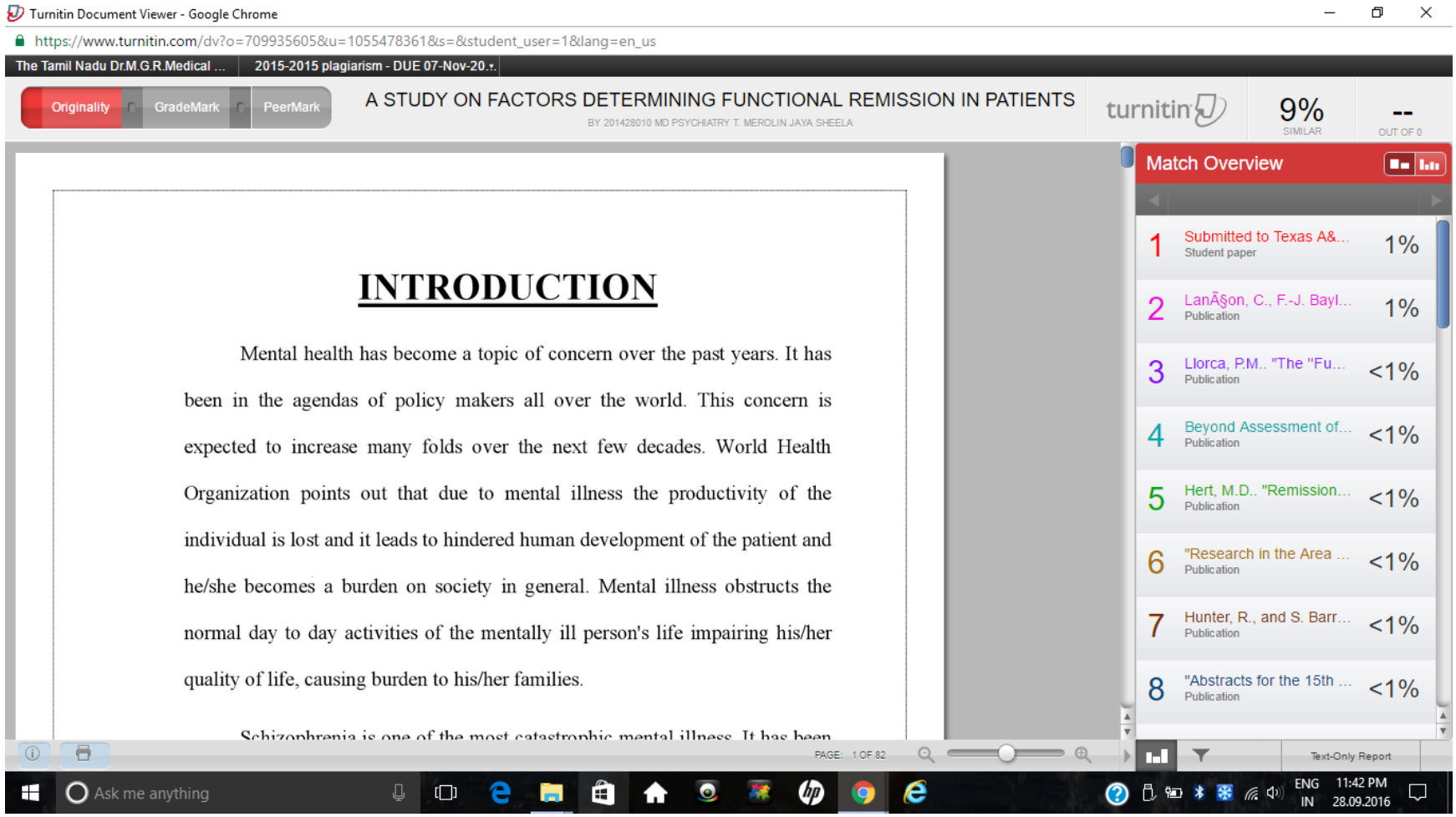
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Mental health has become a topic of concern over the past years. It has been in the agendas of policy makers all over the world. This concern is expected to increase many folds over the next few decades. World Health Organization points out that due to mental illness the productivity of the individual is lost and it leads to hindered human development of the patient and he/she becomes a burden on society in general. Mental illness obstructs the normal day to day activities of the mentally ill person's life impairing his/her quality of life, causing burden to his/her families.
Schizophrenia is one of the most catastrophic mental illness. It has been
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Character count:	63,334
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Submission ID:	709935605

INTRODUCTION

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INTRODUCTION

Mental health has become a topic of concern over the past years. It has been in the agendas of policy makers all over the world. This concern is expected to increase many folds over the next few decades. World Health Organization points out that due to mental illness the productivity of the individual is lost and it leads to hindered human development of the patient and he/she becomes a burden on society in general. Mental illness obstructs the normal day to day activities of the mentally ill person's life impairing his/her quality of life, causing burden to his/her families.

Schizophrenia is one of the most catastrophic mental illness. It has been more than hundred years since Emil Kraeplin introduced the concept of dementia praecox and till now the causative factors of this disorder is a mystery. This most devastating disorder is found among people all over the world. It is one of the major mental illness that is prevalent in 1% of the global population.

The symptom domains of schizophrenia includes positive, negative, aggressive, affective, and cognitive symptoms. The diagnosis and management of schizophrenia is a highly challenging task, since no reliable tests are available till date.

Schizophrenia is a chronic psychiatric disorder with continuous or episodic course which results in impairment of functioning in daily life, social relationships, education, occupation and health. It is a multifarious disorder

with varied clinical course and functional outcomes. More than 24 million people around the world suffer from schizophrenia. It is associated with high mortality rates especially in the younger age group. This illness poses a significant financial burden to the families and on the entire community. The disease makes the person unable to work. It is a most destructive illness associated with relapses which costs four times more than non relapse patients.

Individuals with Schizophrenia individuals with poor functional skills are a great burden to their family and the community at large. No wonder, study of the functioning of Individuals with Schizophrenia has become an urgent need in the treatment and rehabilitation of the patients with schizophrenia. Many research papers have reported that patients remitted in their symptoms of schizophrenia have better functioning level. But, only few of the schizophrenic patients displayed an adequate functioning level. Consequently, functional remission in schizophrenia is an important goal to be achieved. Individuals with schizophrenia even in the remission phase of their illness demonstrate impaired functional outcomes and declined levels of daily activities. A better knowledge of the underlying causative factors is very important in developing strategies for better treatment of schizophrenia.

Hence, the main focus in the treatment of schizophrenia should be on improving functional level in patients with schizophrenia. Several studies have been done to find out predictors of remission among patients with schizophrenia. These predictors are considered relevant for the overall treatment and rehabilitation of patients with schizophrenia.

REVIEW OF LITERATURE

What is remission?

It is a state in which patients have improved in symptoms, subjective well being and functioning.

Definition

Schizophrenia Working Group (SWG) defined, “remission as a state in which a person With schizophrenia experienced an improvement in core signs and symptoms that the remaining symptoms are of low intensity and no longer interfere significantly with behaviour and are below the threshold which are typically used in justifying the initial diagnosis of schizophrenia” (Andreasan et al, 2005).[1]

Remission - The scores in BPRS/PANSS is mild/less on the core symptoms for atleast 6months. Remission is a more defined and achievable goal. It is an essential but not a sufficient milestone towards recovery.

Recovery - Ability to function productively in the community and in the vocation as well as being mostly free from disease related characteristics. Symptomatic Remission –It is stated “people with schizophrenia in remission may continue to be cognitively impaired, socially isolated, unemployed and marginalised.”[2]

Clinical Remission - a marked reduction in the severity of the symptoms clinically either spontaneously or as a result of treatment.

Clinical remission is assessed by measuring the severity of the illness. It includes illness severity, patient's level of distress and other aspects of impairment, as well as the impact of the illness on functioning. Illness severity can be evaluated using Clinical Global Impression (CGI) Scale. It is a clinician's response rating ranging from normal to extremely ill on a seven point scale.

Functional Remission - Ability of the individual to meet the defined roles of the society (such parent, spouse, relatives, or friend) and the satisfaction of the individual's with their ability to meet these social roles, the capacity to function in the real world.

It is a combination of symptomatic remission, illness severity, and social functioning. The ability to Perform daily activities, maintenance of self (earning an income and maintaining a residence) and social interaction. The measurement of functional outcome should be multidimensional and it should consist of at least two parameters - clinical improvement and social outcome.[3]

Symptomatic improvement was defined by the (SWG) Schizophrenia Working Group's criteria; while Global Assessment of Functioning (GAF) score of more than 61 was defined as functional remission.

Functional Assessment in Mental Health Care:-

Assessment of outcome and interpreting it is not an easy task in mental health care. Functional remission is one of the methods to assess the outcome. However, in practice, the assessment of functioning is still uncommon for

various reasons, including the lack of a simple, rating scale for use. Assessment of functional remission in patients with schizophrenic illness is problematic, since it is multifactorial reflecting several aspects like severity of the symptoms, daily activities skills and social relationships.

Various studies have shown that patients had improved favourably either symptomatically or functionally. SOHO study is the earliest to study about symptomatic remission, better functional outcome and subjective satisfaction (3 domains).[4] Functional remission is defined as simultaneously achieving symptomatic, clinical remission with adequate global functioning.[5]

Functional Remission in patients with Schizophrenia:-

Schizophrenia is a syndrome in which there is loss of reality. It is characterized by delusions, hallucinations, and disorganised behaviour. The prevalence of schizophrenia is 0.5 to 1%, and the incidence rate for a year is 0.5 to 5 in 10,000 people. The common age of onset of schizophrenia is in early twenties, although cases have been reported at ages 5 and 6.As far as gender difference is considered in schizophrenia both male and female are affected equally. However, patients with early onset of illness and predominant negative symptoms like withdrawn behaviour, lack of expression, disinterest, lack of motivation, not communicative, slow in thoughts and activities are more likely to be males People with late onset are found to be females characterized by less damage to brain structures.

Assessment of Functional remission:- How do we assess functional remission? Assessment of specific functioning, adequate psychosocial

functioning, improvement in functioning or reaching back to normal functional levels. It implies a score of more than 60 on (GAF) the scale for assessing global level of Functioning in daily skills.

Functioning can be assessed with the GAF (Global Assessment of Functioning) measuring the combination of symptoms, occupational and social functioning. Level of functioning score as 1 - 10, 11 - 20, up to 91 - 100. Total score of GAF > 60 is considered as adequate functioning. Studies show that functional remission can be achieved in 10-68% of people with schizophrenia.

There are many rating scales like WHO disability assessment schedule, Social Skills Performance Assessment, Global Assessment of Functioning to assess the current functional level of an individual.[6-8] Most of the studies in the past had used global assessment of functioning scale

Factors predicting functional remission in patients with schizophrenia:-

Female gender, married individuals , younger age, tertiary education , shorter duration of untreated psychosis, baseline PANSS negative Scores and early response to treatment at three months ,are considered as significant determinants of remission at the end of two years of follow-up study.[9]

Several studies have been conducted to identify predictors of remission -

1. Young age

2. Short duration of illness

3. Employment.

4. Lower positive and negative syndrome scale (PANSS)

5. Short duration of untreated psychosis

6. Low illness severity

7. Medication adherence

8. Less number of hospitalisation.

These determinants of remission are considered essential for the overall outcome of schizophrenia. There is still a search for determinants to assess functional remission and yet no consensus on established measures. The current research is based on using several domains to assess functional remission in schizophrenia.

"Patients who have shown clinical improvement do not necessarily do well in everyday situations even though there is obvious clinical improvement."[10]

Schizophrenia is a continuous illness with enduring, relapsing or worsening of symptoms, with minimal hope for long standing remission and functioning improvement. Schizophrenia has a variant course, which can be favourably influenced by continuous and comprehensive treatment as well as social factors such as good family support and better neurocognitive functioning. An operational definition for functional remission in schizophrenia includes symptomatic remission; regular or part-time engagement in work or studies; living independently without being monitered by the family or

caregivers; not depending on others for financial support; and spending time with friends on a regular basis and sharing their activities.[11]

In a study conducted by Emsley R et al, out of the 462 subjects 323 (seventy percent) had a reduction of core symptoms to mild levels as measured by the PANSS. Only 109 (23.6%) of them maintained in this mild level for a minimum period of 6 months thereby meeting the criteria for remission. The shorter duration of untreated illness and the response to treatment at six weeks were the two strong determinants of remission noticed in remitted patients compared to patients not achieved remission. Patients in remission phase showed greater improvement in all the subscales of PANSS, clinical impression scale, better quality in life, less number of relapses, their attitude towards drug treatment was more favourable, and received low doses of antipsychotic drugs.[12]

In the study conducted by De Hert, M et al, they considered the severity of core symptoms on PANSS to be low (severity criteria), persistence of the core symptoms at low level over a period of at least 6 months (time criteria) as remitted. Patients in remission had a better insight to their disorder, the level of global functioning was higher and they functioned in a better way with respect to their daily living activities. This was noticed when both were compared to patients never meeting remission criteria and to patients only meeting the severity criteria but not the time criteria. Of the patients not meeting the criteria for remission at baseline, 21 percent attained remission at the endpoint of study.[13]

Stephen J. Siegel et al have stated, “Level of function in seven domains (social function, occupational function, independent living, symptom severity, fullness of life, extent of psychiatric hospitalization, and overall level of function).”[14] The role of gender, educational level, and duration of the disease to functional remission were also studied. The study showed that initial symptoms had a well defined pattern of prognostic importance for functional remission in patients on treatment, when compared with new drug naive patients. In addition, female and male patients showed difference in the degree to which the initial functional level and symptoms were correlated with the later function. Further, Stephen J. Siegel et al have observed, “Initial level of function, symptoms, sex, education, and duration of illness are all important predictors for functional outcome in patients with schizophrenia.”[14]

In the literature review identified by Robert Paul Liberman et al the Factors associated with recovery are stated as follows:-

“1. Family or residential factors: supportive family or other caregivers who encourage and positively reinforce incremental progress of the individual with realistic expectations for social, emotional, and instrumental role performance (i.e., low expressed emotion family or residential environment).

2. Absence of substance abuse.

3. Shorter duration of untreated psychosis.

4. Good initial response to neuroleptics.

5. Adherence to treatment.

6. Supportive therapy with a collaborative therapeutic alliance.

7. Good neurocognitive functioning.

8. Absence of the deficit syndrome .

9. Good premorbid history.

10. Access to comprehensive, coordinated and continuous treatment".[15]

Several attempts have been made by researchers to identify predictors in functional remission in schizophrenia for the past 50 years. With regard to functional remission, identification of specific predictors could identify the patients who would probably achieve remission and to identify the risk factors for non remission. Overall, the most relevant determinants of remission were identified as: (i) lesser duration of untreated illness (ii) good premorbid functioning (iii) lower baseline scores on illness severity (iv) better level of functioning at baseline (v) early functional improvement (vi) treatment adherence (vii) female gender and (viii) lack of substance dependence at baseline or persistent use of substance during treatment. Other identified predictors of outcome in schizophrenia such as insight, cognitive performance, age at onset, biological variables, or type of interventions were not assessed in follow-up studies in the relation to the proposed remission criteria.

Duration of untreated psychosis/Illness (DUI) and functional remission:-

Duration of untreated psychosis or Illness is the interval from the occurrence of psychotic symptoms to the first consultation with psychiatrists.

The response to antipsychotic treatment was greater when the duration of untreated psychosis was shorter, which is measured by high scores on

positive, negative symptoms, psychopathology and functional improvement. At the beginning of drug treatment, the period of initial untreated illness was associated with higher negative symptoms score but not with neurocognitive decline or severe positive symptoms. The duration of untreated cillness is considered as a potentially changeable prognostic indicator. The better understanding of the mechanism underlying the duration of untreated illness can influence greatly the prognosis of schizophrenia. This may provide better knowledge about the pathophysiology of schizophrenia and for better treatment strategies.[16]

Longer duration of untreated psychosis has a determinant value for poor functional and clinical remission in schizophrenia with respect to persistence of the symptoms and social relationships which is not dependent of age, onset of illness and the clinical scoring of these outcomes at the first consultation to psychiatric services. They do have significance with relation to the results of previous studies stating the association between duration of untreated illness, and the functional level and higher scores on negative symptoms following a period of drug treatment. Several factors relevant to social functioning, such as self care, functioning at work place and interpersonal relationships, are common to measures of functional and clinical remission, and thus there is more strong chance of their association with duration of untreated psychosis. However, our results yielded evidence for a direct relationship between duration of untreated psychosis and social function.[16] Strategies to decrease the

duration of untreated illness and achieve an early response to drug treatment could improve the rates of functional remission.[1]

Many studies reported better functional improvement in schizophrenic patients in India than in the West countries. The patients in the study had an average period of untreated illness of four years, which is considerably more than that reported in the studies from the West. It is understood that the reported better outcome for Schizophrenia in India is unlikely to be because of shorter duration of untreated psychosis. Hence, some other inherent advantages in our population is to be identified. However, instituting treatment earlier gives further advantage and can make the outcome in our people even better. In our population of schizophrenia too, longer duration of untreated psychosis predicts poor functional outcome. Many authors have reported that reducing the time between onset of psychosis and institution of treatment earlier would significantly improve outcomes for schizophrenia.[17]

Duration of Illness and functional remission:-

Patients who had longer duration of illness were less likely to show functional remission. If the pharmacotherapy is started earlier, they showed a better functioning more than those who had been on other treatments like psychotherapy, electro convulsive therapy or religious methods did not show improvement. Later, when they were started on drugs resulted in better functional outcomes.[19]

Insight and functional remission:-

Improvement in insight during early period of illness has a better functional outcome. More than fifty percent of patients diagnosed with schizophrenia lacked either partial or total insight into their illness. Majority of the studies reports association of insight to adherence of drug treatment. Insight also has significant influence on symptom remission and long term functional outcome.[20]

Hospitalisation and functional remission:-

Duraion of stay in the hospital and the no. of times the patient gets inpatient treatment plays a significant role in patient's functional outcome. No/less admission to the hospital shows good prognosis in the functional aspects of patients with schizophrenia.

The study by Rebecca Wolff et al resulted in the conclusion that of young age, short duration of illness, employment, less number of hospitalisation, low score on PANSS negative symptoms were predictive of good functional remission. The mean number of admission in hospital was 2.76. People with less number or short stay in the hospitals were remitted with good functioning.[21]

Employment and functional remission:-

Employment status forms a major component of the functional remission in patients with schizophrenia and for a better prognosis for

schizophrenic illness. The paper published in Warsaw, Poland which showed employment had a strong association with positive changes in the domains that are do not have direct relation to working, such as leisure activities. Being in employment may increase the benefits of leisure, professional success may facilitate leisure activity and involvement and finally income, may make free time activities possible. This finding shows that being in employment can affect different areas of functioning. Vocational rehabilitation significantly improved patients' performance in cognition which measures the executive functions essential in better functional Remission.[22]

Research has demonstrated that severe mental illness may significantly affect some areas, whereas other domains of functioning may become relatively free of the disease's harmful effect. For example, some people may perform well in their employment while still having some positive symptoms, or the vice versa; an individual may be free of symptoms, but still have significant difficulties in social functioning. Training patients in the areas in which they are impaired, may hold more promise in terms of functional outcome. Could employment also be a factor that facilitates the functional remission? Generally, work improves self-esteem. It provides self-identity as well as satisfaction with being able to provide a financial contribution to the household. Knowledge about mental health in the workplaces has increased in recent years, which may in turn improve the chances of people with mental disorders successfully gaining and maintaining occupation.[23]

Employment plays an important role in earning income and other benefits, including identity in the society, social relationships and support, a source of organising and utilising time, involvement in social activities, and a feeling of personal achievement. People with chronic mental illness are very sensitive to negative effects of being not employed, and they experience impediment to work, due to prejudice, stigma, and injustice.

The review showed a great difference in occupation rates in people with mental illness. However, the overall occupation rate was very low. Employment rates showed wide difference across the countries. In General, there was a positive association between employment and functionality. However, the causal relationship of this remained unclear. When focusing on improving employment participation and functional outcome among people with mental illness, the severity of symptoms, functional outcome, demographic characters of the people, and environmental factors must be taken into consideration. A better knowledge of the associations between these factors could lead to more comprehensive health management, and better functional outcome, for people with chronic mental disorders like schizophrenia.[23]

Age and functional remission in schizophrenia:-

More than eighty percent of the elderly patients with schizophrenia show had attained persistent functional remission. They did not much difference in psychopathology, but, significantly differed in everyday functioning. Functional remission can occur even in older patients with very

chronic illness, but its prevalence is lower than that of many of the published studies. Functional remission reflects achieving premorbid level of functioning, which is consistent with the current neuro developmental hypotheses of schizophrenia.[24]

In this study, the course of the schizophrenic illness in elderly patients appears stable, but, they are found to be symptomatically and functionally impaired. Hence, contradicted with the notions of either progressive decline or improvement in the severity of symptoms in schizophrenic patients.[25]

There was a significant relationship noticed between aged people and mental well-being in the study by David P. Folsom and his colleagues. It was found to be different between the schizophrenic patients and the normal subjects. Schizophrenic patients of older age was associated with higher mental well-being than normal controls.[26]

Several studies have reported the remission of symptoms in young individuals with schizophrenic illness. In the study by Bankole A, Cohen CI et al on patients with more than 55 years, nearly half of them achieved remission. This was consistent with the earlier reports in younger age groups. The findings predicted that remission is an achievable goal and the managements should be focused on the factors more in favour of remission which may speed up the functionality in older individuals with schizophrenia.[27]

According to Berman and Gurland model the determinants and consequences of functional impairment were assessed. Abnormal movements,

use of dopa agonists, and negative symptoms were the three significant predictors noticed. Satisfaction in life and depression were the two other factors which had significant impact on functional remission. Thus, this model is useful for exploring impairment in functioning in older persons with schizophrenia. Moreover, the factors that had significant impact on impairment of functioning are potentially remediable.[28]

Gender and functional remission in schizophrenia:-

Male patients have an earlier onset of the illness, poorer premorbid level of functioning and different behavioral predictors before the onset of illness. Male patients have more severe negative symptoms and cognitive deficits, with hallucinations and persecutory delusions with more quick response to antipsychotic medications. Several structural abnormalities in the brain and neurophysiological changes were noticed. Female patients had more of affective symptoms, less smoking habit and substance use. Families of male patients were more critical, and had expressed emotion which shows a severe negative impact on their functional level. The study favours the role of gender in schizophrenia due to various reasons like sexual hormones, neurodevelopmental and psychosocial differences in sex.[29]

Differences in course and pathology of the illness in both males and females have been frequently reported. However the impact of gender on remission of symptoms and functioning is still debatable. The study showed an earlier of illness in males compared to females. Also, showed more negative

symptoms and frequent usage of alcohol. No significance was noticed between males and females regarding symptomatic and functional remission.[30]

A study was conducted to find out the relationship between the symptom profile and functional outcome using subscales of the Global Assessment of Functioning (GAF). It was studied in 195 outpatients with schizophrenia spectrum disorders based on their sex. Better levels of functioning in male patients and low symptom scores were noticed in female patients. There was also a noticeable difference in neurocognition between both sex indicating that executive functioning may have a greater influence on the symptom and functional profiles of males than that of females. The results also reported that recent concept of endophenotypes in schizophrenia might also be sex-specific.[31]

In an epidemiological field study done in Croatia, not much difference noted in males and females in respect of average age of onset of the illness or the age of first admission. The illness started at a slightly earlier age in females compared to males, which could be due to the biological and psychosocial differences between both genders. The age of admission in the hospital for the first time also was noticed to be significantly higher in females than that of males.[32]

The presence of gender differences at the onset of illness and whether these have any impact on the clinical and functional outcome 2 years after the treatment was initiated is the aim of this study by Segarra R et al. Men presented with earlier age of onset of illness, more of prodromal and Negative

symptoms. Women were married and lived with their children and families. Females mostly had stressful events prior to the illness. The dose of antipsychotics, the side effects scores and the number of hospitalisations were the same during the study period. Treatment adherence was more in females. Both of them showed improvements in outcomes. Final results, after study period was the same for both the groups. Gender does not seem to have influence on the clinical and functional remission in this study.[33]

Social support and functional remission:-

Family support helps in improving social functioning and subjective well-being for people with schizophrenia, one of the chronic and socially distressing health conditions. Family members and nearby residents help reduce the stress and victimization. Healthy living environments reduce risk of violence and substance abuse.[34]

Drug Compliance and functional remission:-

Remission of functionality correlates significantly with proven measures of severity of symptoms, functioning in daily skills and the quality of life. It appears to be an achievable goal and it is also sustainable for a significant percentage of patients receiving drug treatment. The atypical antipsychotics have favourable effects on factors like negative symptoms, cognitive impairment, social functioning, and subjective well being which plays an important role in achieving functional remission. However, poor compliance with medications due to illness, adverse effects, and various other reasons still

pose a threat in achieving functional improvement. But, the use of long-acting antipsychotic agents facilitate drug compliance and helps in improving functional outcomes and thereby achieving remission.[35]

Early improvement in symptoms with treatment is considered to be important in patients of schizophrenia. Patients with schizophrenia should show an improvement by reduction of symptoms by at least 30% in total score of PANSS at the end of two weeks to attain response and symptom remission.[36]

Developing countries and functional remission:-

The outcome for Schizophrenic illness in low and middle income countries may be good when compared with people living in highly developed countries. In a three year follow up study, 66% patients achieved clinical remission and 25% showed improvement in functional outcome. Baseline social functioning, females and untreated previous illness were consistent determinants of remission across regions. Clinical remisssion of schizophrenia was found to be worse in Europe in comparison with other regions. However, remission in functional domain follows a different course.[37]

Negative Symptoms and functional remission:-

Negative symptoms of schizophrenia like emotional withdrawal, lack of spontaneity, lack of abstract thinking and blunted emotions have a serious impact on functioning of individuals in all spheres. It poses a hindrance to everyday activities and social functioning.

Many patients with schizophrenic illness suffer from impaired functioning with high rates of unemployment. Negative symptoms mostly

persist during the course of the illness and may have a detrimental effect on functioning.

In the study there were strong, statistical correlations between negative subscale of PANSS and all other function scales. All items in the negative symptom score of PANSS and other functional scores showed significant relations between them. The participants who were employed. had a strong correlation with functional outcome. The study showed a strong relationship between functional outcome and negative symptoms. Considering the impact of negative symptoms on functional level, more focus should be on effective treatments for negative symptoms. Most of the patients with schizophrenia live in community nowadays and improvement in negative symptoms would help them function adequately to support their families.

There is significant relation between negative symptoms and poor functionl outcomes noticed in many studies. The data of these studies indicate that negative symptoms are important factor in clinical remission. Assessment and treatment of these symptoms of schizophrenia may have immense stress on health economics."Negative symptoms, which include amotivation, flattening of emotional responses, reduction in speech and activity, and social withdrawal, contribute to much of the disability associated with schizophrenia. These symptoms are also associated with poor psychosocial functioning and a reduced likelihood of remission."[38]

"Negative symptoms are known to weaken functional remission in people with schizophrenia. Negative symptoms had strong association with functional outcomes even in treatment-free patients. Patients who had predominant negative symptoms significantly contribute to poor functional skills in people with schizophrenia. A good understanding of the causative factors and pathology of these symptoms is required for the future research for effective therapeutics which helps in promoting functional remission." Although persistent negative symptoms (PNS) are known to contribute significantly to poor functional outcome**,** they remain poorly understood**."** Baseline functioning and change in the pattern of functioning were more strongly related to PANSS negative score than any other symptoms'.[39-40]

Substance use and Functional Remission:-

The study done on the role of substance use and remission in schizophrenia by cuffel et al indicated that the use of substance remained stable throughout the illness. The abuse or dependence pattern of substance use was seen more in young males. Increase in depressive symptoms and more admissions in hospitals were also observed. The individuals who showed remission were older females with less depressive symptoms. Higher rates of remission was noticed in the study group following dual diagnosis treatment thus favouring for these treatment mode.[41]

The study by Kate B Carry and colleagues on substance use and schizophrenia noticed the use of alcohol and substances in more than 50% of the subjects. Substance use results in cognitive and social deficits. Prolonged

use of alcohol and poly substances may impair the cognitive and social functions like family, occupation, health and legal problems. Alcohol abuse may result in negative affect and psychotic symptoms even in the absence of chronic mental illness.[42]But, some studies had a different view contradicting this finding stating that individuals using substance showed less of negative and disorganised behaviours than others not using substance. The improvement in psychosocial functioning was found to be equal in both the study groups.[43]

AIMS AND OBJECTIVES OF THE STUDY

AIM:-

To study the factors determining functional remission in patients with schizophrenia.

OBJECTIVES:-

PRIMARY OBJECTIVES:-

1. To assess functional remission in patients with Schizophrenia.

2. To identify predictive factors for functional remission in patients with schizophrenia.

SECONDARY OBJECTIVES:-

1. To analyse the relation between socio-demographic profile and functional remission in patients with schizophrenia.

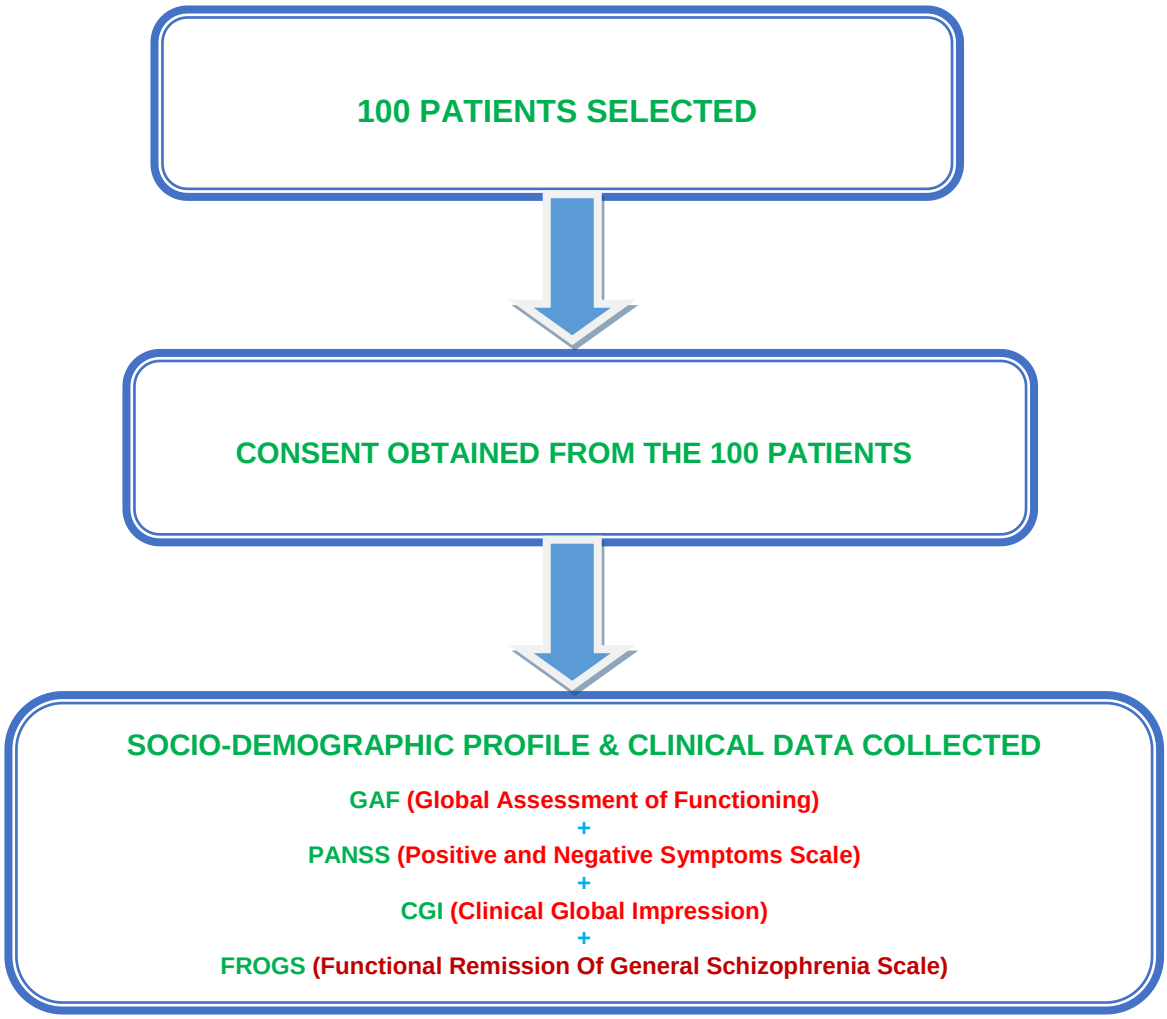
2. To analyse the relation between clinical data and functional remission in patients with Schizophrenia.

Most of the schizophrenic patients are not able to perform functionally well in spite of being symptomatically remitted. Hence, this study aims to identify functional remission in schizophrenic patients. Functional remission assessed as a combination of symptomatic remission, clinical severity and global functioning. The influence of demographic and clinical data on functional remission assessed by comparing remitted and non-remitted patients.

HYPOTHESIS

1. Functional remission is lower than symptomatic remission in schizophrenia.
2. Functional remission is influenced by demographic factors, clinical profile, drug adherence, hospitalisation and social support in patients with schizophrenia.

METHODOLOGY



ETHICAL CONSIDERATIONS:-

The study methodology and validated tools were scrutinized by the institutional ethics committee following the academic regulations of Dr. MGR Medical University. Ethics committee approval was granted in the month of April 2016 to conduct the research in Institute of Mental Health of Madras Medical College. The ethical committee approval document is enclosed herewith.

Nature and point of the study, voluntary participation, the capacity to withdraw from study, secrecy and security of the patient's information, stockpiling and production of the information, and the advantages of the research were disclosed in writing with the eligible participants.

STUDY DESIGN, SETTING AND SAMPLE:-

The study was a cross sectional study performed in Institute of Mental health, Kilpauk, Chennai - 600 010.

SAMPLING:-

A consecutive purposive sampling technique was undertaken as the aim and purpose of the study warranted. This involves a predetermined group of individuals. This technique would help the researcher to get specific and relevant information about the functional remission for the group of people with schizophrenia. It was a purposive, judgmental and non random selection procedure.

STUDY GROUP:-

The 100 subjects for the study group were selected from the patients attending the outpatient department of Institute of mental health, Kilpauk, Chennai - 600 010.

The study was conducted from April 2016 to July 2016. The members of the study group fulfilled the inclusion and exclusion criteria as follows non random selection procedure.

Inclusion criteria:-

1. Individuals diagnosed to have schizophrenia according to ICD-10 criteria.
2. Individuals between age group 18-50 years.
3. Cognitively able Individuals capable of giving written consent to participate the study.

Exclusion criteria:-

1. Individuals with other mental disorders.
2. Individuals with neurological disorders.
3. Individuals with substance dependence.
4. Individuals refusing to give consent.
5. Individuals unwilling to participate in the study.

TOOLS:-

- **Semi structured interview schedule:** The schedule was developed for the study to collect data regarding the following

1. Socio demographic details included

   Age, Sex, Education, Occupation, Marital status, Religion, Income, Socio economic status, Type of family, Social Support.

2. Disease related characteristics which included
   a. Onset of he disease
   b. Duration of the illness
   c. Duration of Untreated illness
   d. Number of hospitalizations
   e. Antipsychotics used
   f. Drug compliance
   g. Parenteral depot preparations used
   h. Electro convulsive therapy
   i. Substance use
3. **Positive and Negative Syndrome Scale (PANSS**) to assess symptomatic remission in patients with schizophrenia.
4. **Global Assessment of Functioning(GAF) Scale** to assess functional remission in patients with schizophrenia.
5. **Clinical Global Impression (CGI) Scale** to assess symptom Severity.
6. **Functional Remission Of General Schizophrenia (FROGS) Scale** to assess different domains of functional improvement in patients with schizophrenia.

DESCRIPTION OF INSTRUMENTS

Positive And Negative Syndrome Scale for Schizophrenia (PANSS):-

This is a 30 items scale developed by Kay et al in the year 1987. It is used to assess the positive symptom, negative symptoms and general psychopathological symptoms. It has 7 items for positive, 7 items under negative domain and 16 items under general psychopathology domain. It is scored on a 1- 7 point continuum. The psychometric values shows Cronbach's alpha of 0.809 and 0.931 for internal consistency and reliability. The time taken to administer and complete the scale is about 45 minutes.

POSITIVE

"P1	Delusions
P2	Conceptual disorganisation
P3	Hallucinatory behaviour
P4	Excitement
P5	Grandiosity
P6	Suspiciousness/persecution
P7	Hostility

NEGATIVE

N1	Blunted affect
N2	Emotional withdrawal
N3	Poor rapport
N4	Passive/apathetic social withdrawal

N5 Difficulty in abstract thinking

N6 Lack of spontaneity & flow of conversation

N7 Stereotyped thinking

GENERAL PSYCHOPATHOLOGY

G1 Somatic concern

G2 Anxiety

G3 Guilt feelings

G4 Tension

G5 Mannerisms & posturing

G6 Depression

G7 Motor retardation

G8 Uncooperativeness

G9 Unusual thought content

G10 Disorientation

G11 Poor attention

G12 Lack of judgement & insight

G13 Disturbance of volition

G14 Poor impulse control

G15 Preoccupation

G16 Active social avoidance"[44]

"1. Absent - Definition does not apply

2. Minimal - Questionable pathology; may be at the upper extreme of normal limits.

3. Mild - Presence of one or two delusions which are vague, uncrystallized, and not tenaciously held. Delusions do not interfere with thinking, social relations, or behavior.

4 Moderate - Presence of either a kaleidoscopic array of poorly formed, unstable delusions or of a few well formed delusions that occasionally interfere with thinking, social relations, or behavior.

5 Moderate severe – Presence of numerous well-formed delusions that are tenaciously held and occasionally interfere with thinking, social relations, or behavior.

6 Severe – Presence of a stable set of delusions which are crystallized, possibly systematized, tenaciously held, and clearly interfere with thinking, social relations, and behavior.

7 Extreme - Presence of a stable set of delusions which are either highly systematized or very numerous, and which dominate major facets of the patient's life. This frequently results in inappropriate and irresponsible action, which may even jeopardize the safety of the patient or others."[45]

Global Assessment of Functioning (GAF) Scale:-

The scale measures the functioning in mental health illness based on social, psychological and occupational functioning. It does not include the functional impairment caused by physical illness or due to environmental reasons.

0	inadequate information
1 - 10	persistently danger of severely hurting self or others/ persistent inability to maintain minimal personal hygiene/ serious suicidal act with the clear expectation to end life.
11 - 20	some danger of hurting self or others/occasionally fails to maintain minimal personal hygiene/gross impairment in Communication
21 - 30	behaviour is considerably influenced by delusion/ Hallucination/serious impairment in communication/judgement or inability to function in almost all areas
31 – 40	some impairment in communication/ major impairment in home and work places
41 – 50	serious symptoms like suicidal ideation/ serious Impairment in social and occupational functioning.
51 – 60	moderate symptoms/ moderate impairment in social and occupational functioning.
61 – 70	mild symptoms/ mild difficulty in functioning.
71 – 80	symptoms if present are transient/ temporary failure in work.

81 – 90 no symptoms with good functioning in all areas.

91 – 100 superior functioning in all areas of functioning. Intermediate scores can be used wherever applicable.

Clinical Global Impression (CGI) Scale:-

0 - very much improved

1 - much improved

2 - minimally improved

3 - no change

4 - minimally worse

5 - much worse

6 - very much worse

Functional Remission Of General Schizophrenia(FROGS) Scale:-

This is a new scale for assessing social functioning. This helps to explore the complex relation between symptoms and functionality. However functional aspects needs improvement in cognition and social functioning also. It measures these domains which are essential for functional remission.

I. 1 - Daily Life

2 - Personal care and Appearance

3 - Diet

4 - House keeping

5 - Administrative and Financial Management

6 - Travel and Communication.

II. 1 - Activties

2 - Personal activities

3 - Social activities

4 - Studying or work.

III. 1 - Relationships

2 - Family, friends

3 - Love and sexual life

4 - Social network

5 - Absence of Antisocial or violent behaviour

6 - Empathy and help for others.

IV. 1 - Quality of adaptation

2 - Management of his/her illness and treatment

3 - Adaptation to stress and unforeseen circumstances.

V. 1 - Health and Treatments

2 - Taking charge of personal health

3 - Respect for biological rhythms

4 - Functional impact of the secondary effects of treatment.

Each item is scored from 1-5.

0 - do not do

1 - do partially

2 - do a significant part

3 - do almost all the activity

4 - do perfectly

Total Score is highly reliable, which is used for measuring general construct for evaluating functional remission in schizophrenic patients. Mainly used in patients who had reached the symptomatic remission level.[46] The reliability of the scale is very high. The psychometric values shows Cronbach's alpha of 0.919 for internal consistency and reliability.[47]

This scale gives a new assessment of social functioning. It includes several domains accurately and in a organised way excluding psychopathological symptoms. FROGS may be a milestone towards creating a consensual international definition of functional remission in schizophrenia.

PROCEDURE:-

- The information regarding the study and the procedure were given to each patient and an informed consent was obtained.
- The Socio- Demographic data regarding their individual characteristics like name, age, sex, marital status, education, employment was collected using the semi structured interview schedule.
- The **Disease-related characteristics** i.e. onset of illness, duration of the illness, duration of untreated illness, number of hospitalization were collected from the patients using the schedule.
- Positive and negative syndrome scale (PANSS) was administered to evaluate the symptoms in the patients with schizophrenia.

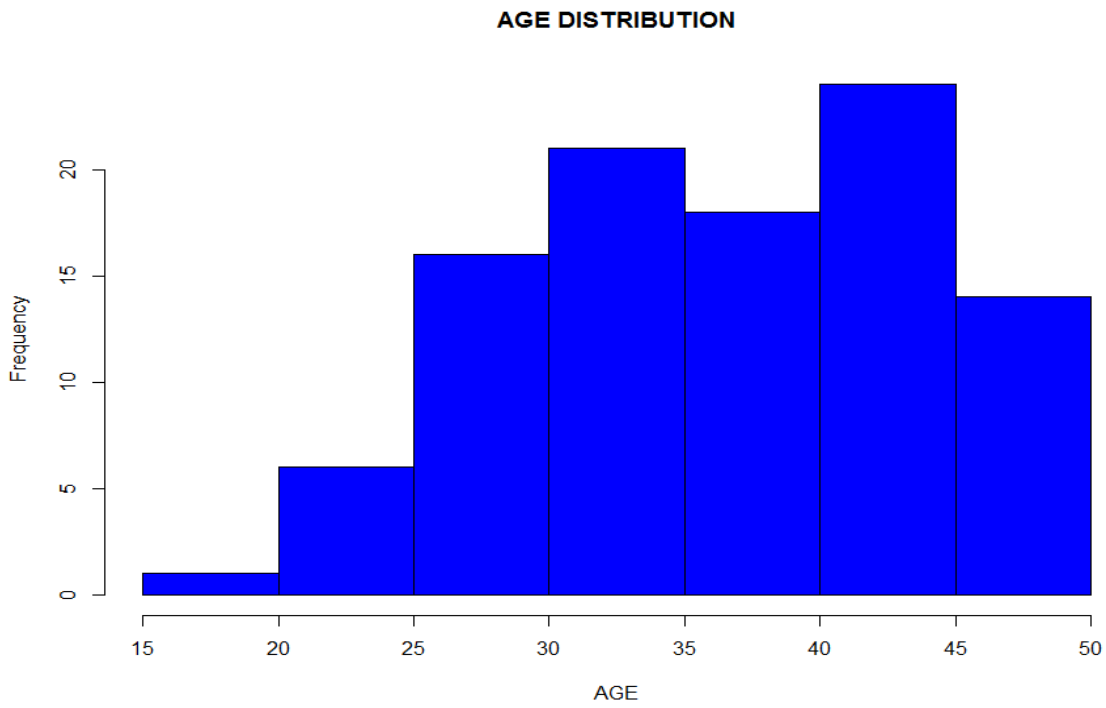
- ❖ Clinical Global Impression(CGI) scale was administered to assess the clinical outcome in patients with schizophrenia.
- ❖ Global Assessment of Functioning (GAF) scale was administered to assess the overall functioning of schizophrenic patients.
- ❖ Functional Remission Of General Schizophrenia (FROGS) scale was administered to assess the functioning remission in daily activities, employment, social interaction, finance management etc. in patients with schizophrenia.

ANALYSIS OF DATA:-

- ➢ All the data obtained were entered in the Microsoft Office Excel sheets to prepare the Master Charts for the entire sample size.
- ➢ Normal distribution of the data of the individual groups was checked.
- ➢ The socio demographic details were analyzed using the descriptive statistics.
- ➢ Analysis using simple frequencies ,means, and test of significance like 't' test, Descriptive statistics were performed with the data collected.

RESULTS

Graph - 1 Age Distribution of the study group



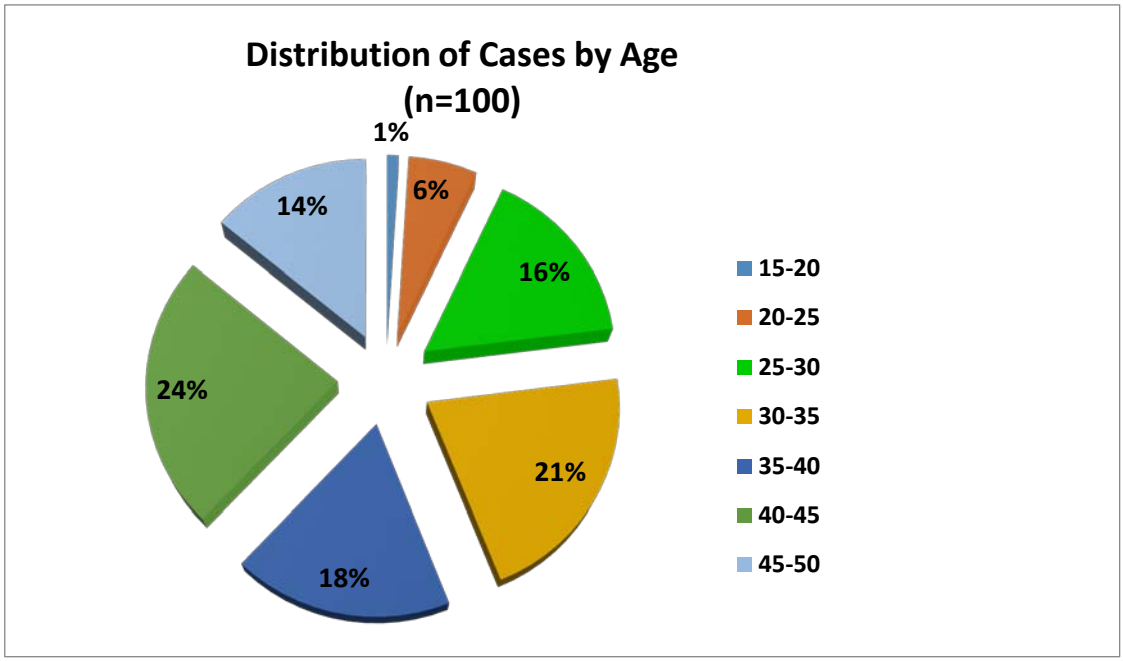
The above graph shows the descriptive statistics of age for the study group. It ranges from 19 years to 50 years. Most of the patients with schizophrenia in the study group were between 30 - 50 years.

Table: 1. Age Distribution of the study group

	AGE						
	15-20	**20-25**	**25-30**	**30-35**	**35-40**	**40-45**	**45-50**
n=100	1	6	16	21	18	24	14
n %	1%	6 %	16 %	21%	18%	24%	14%

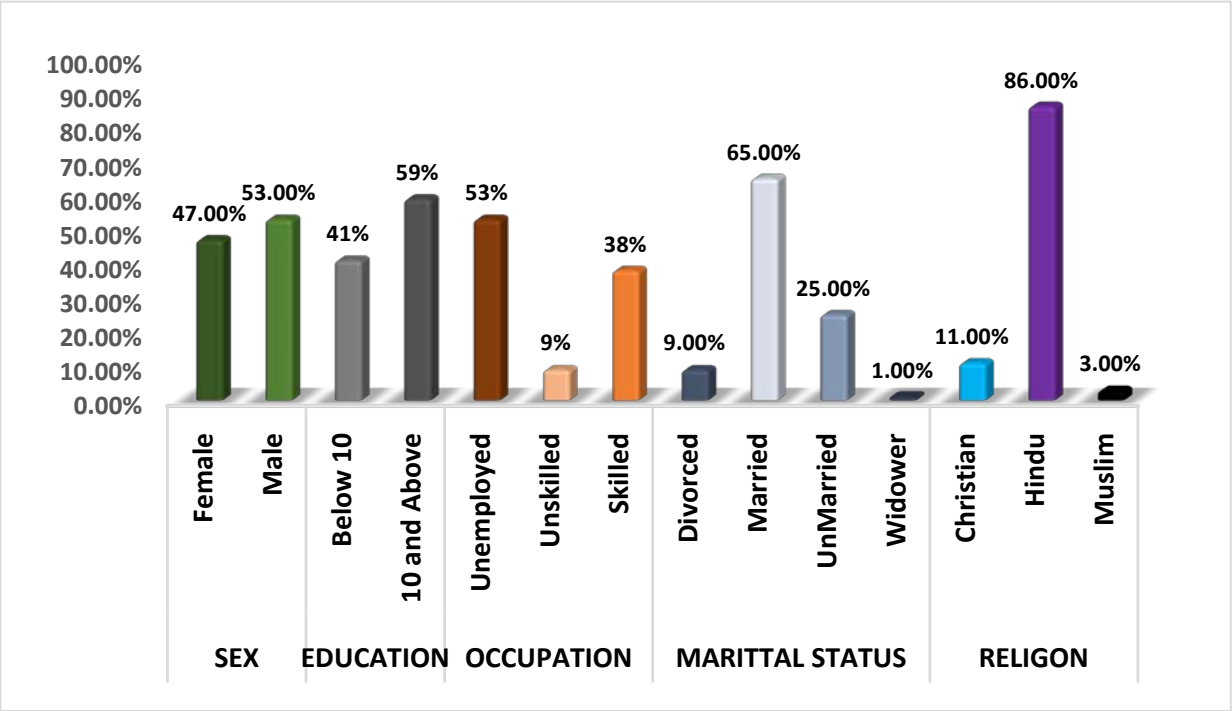
The above table shows the age wise distribution of the study group. Majority of the samples belong to 40 to 45 age group and they represent 24 percentage of the study group.

Pie Chart - 1 Age Distribution of the study group



The above pie chart shows the age wise distribution of the study group. Majority of the samples belong to 40 to 45 age group and they represent 24 percentage of the study group.

Graph - 2 Socio-Demographic Distribution of the Study Group



The above graph shows that in the study group there were 53 males and 47 females. The sample consists of equal number of subjects from both sex. Most of the study subjects are educated. There is only a minor difference in those studied above 10th standard. In the study group, 53% were unemployed. No difference in the study population in employment variable. Most of them are married indicating good social support. Of the study subjects**,** 86 percentage belonged to Hindu religion.

Table - 2 Socio-Demographic Distribution of the Study Group

		n = 100	n%
Sex	Male	53	53.00%
	Female	47	47.00%
Education	Below 10	41	41%
	Above 10	59	59%
Occupation	Un employed	53	53%
	Un skilled	9	9%
	Skilled	38	38%
Marital Status	Separated	1	1.00%
	Divorced	8	8.00%
	Married	65	65.00%
	Unmarried	25	25.00%
	Widower	1	1.00%
Religion	Christian	11	11.00%
	Hindu	86	86.00%
	Muslim	3	3.00%

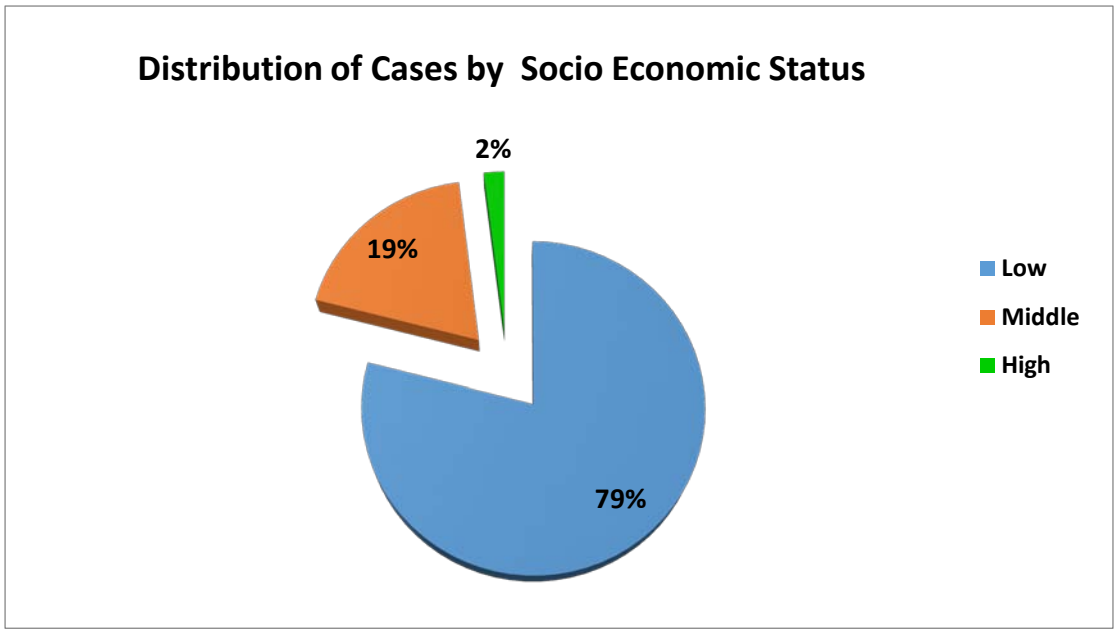
The above table shows that in the study group there were 53 males and 47 females. The sample consists of equal number of subjects from both genders. Most of the study subjects are educated. There is only a minor difference in those studied above 10th standard. In the study group, 53% were unemployed. No difference in the study population in employment variable. Most of them are married indicating good social support. Of the study subjects**,** 86 percentage belonged to Hindu religion.

Table - 3 Socio-economic Status of the Study Group

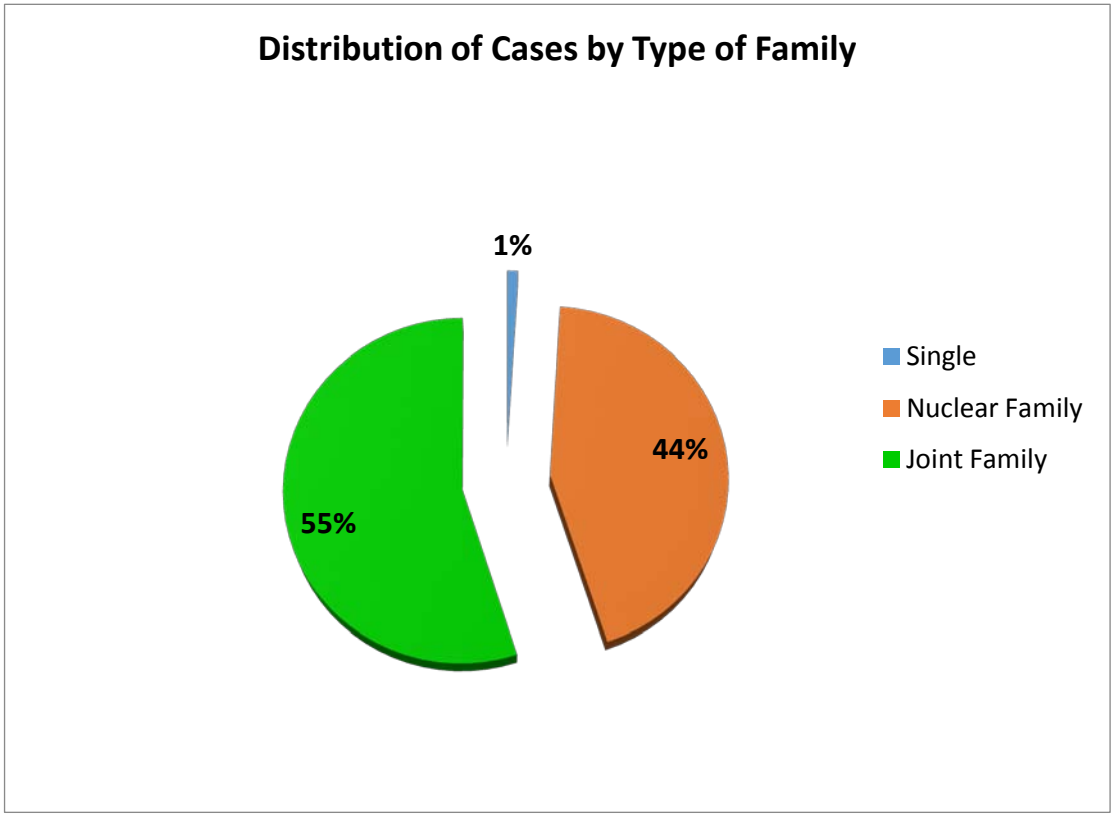
		n=100	n %
Socio Economic Status	High	2	2.00%
	Low	79	79.00%
	Middle	19	19.00%
Type of Family	Joint	55	55.00%
	Nuclear	44	44.00%
	Single	1	1.00%
Social Support	Good	69	69.00%
	Poor	31	31.00%

The above table shows most of the individuals in the study group belonged to low socio economic group. The comparison could not be made as there were only 2 subjects belonging to higher socio economic status in the sample. In the study group, 55 percentage were living as joint family and the rest as nuclear family. In the study group 69 % of the patients had good social support, whereas the remaining 31% did not get enough social support. It is significant to note that the patients who had good social support functionally remitted from schizophrenia.

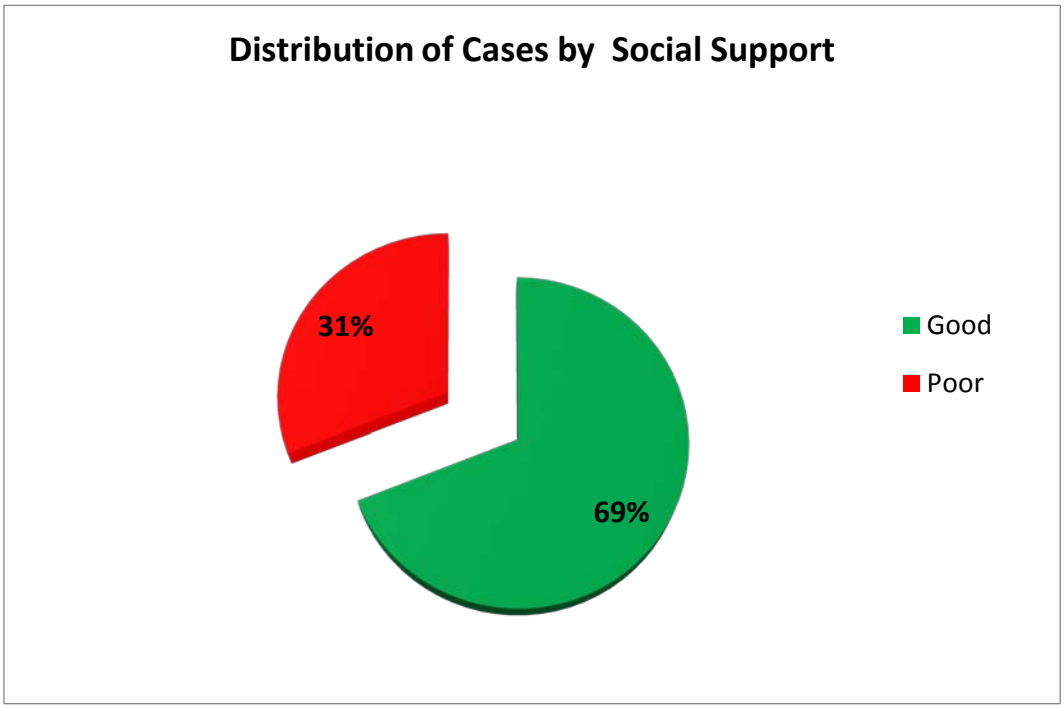
Pie Chart - 2 Distribution of Socio-economic Status of the study group



Pie Chart - 3 Distribution of Type of Family of the study group

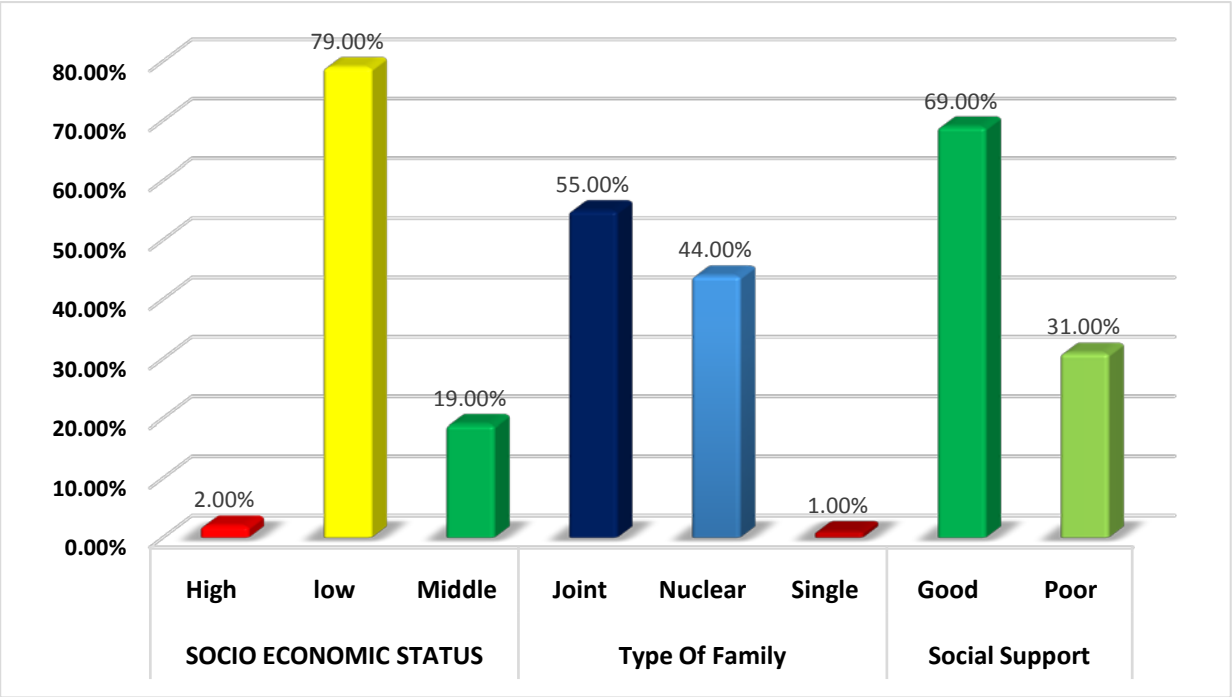


Pie Chart - 4 Distribution of Social Support for the study group



The above pie charts - 2, 3 & 4 show most of the individuals in the study group belonged to low socio economic group. The comparison could not be made as there were only 2 subjects belonging to higher socio economic status in the sample. In the study group, 55 percentage were living in joint family and the rest in nuclear family. In the study group, 69 % of the patients had good social support, whereas the remaining 31% did not get enough social support. It is significant to note that the patients who had good social support were functionally remitted from schizophrenia.

Graph - 3 Socio-economic Status of the Study Group



The above graph shows 79% of the study group belonged to low socio-economic status. Of the sample subjects, 55 percent of them lived in joint families and 69% had good family support. The independent 't' test was significant with family support variable.

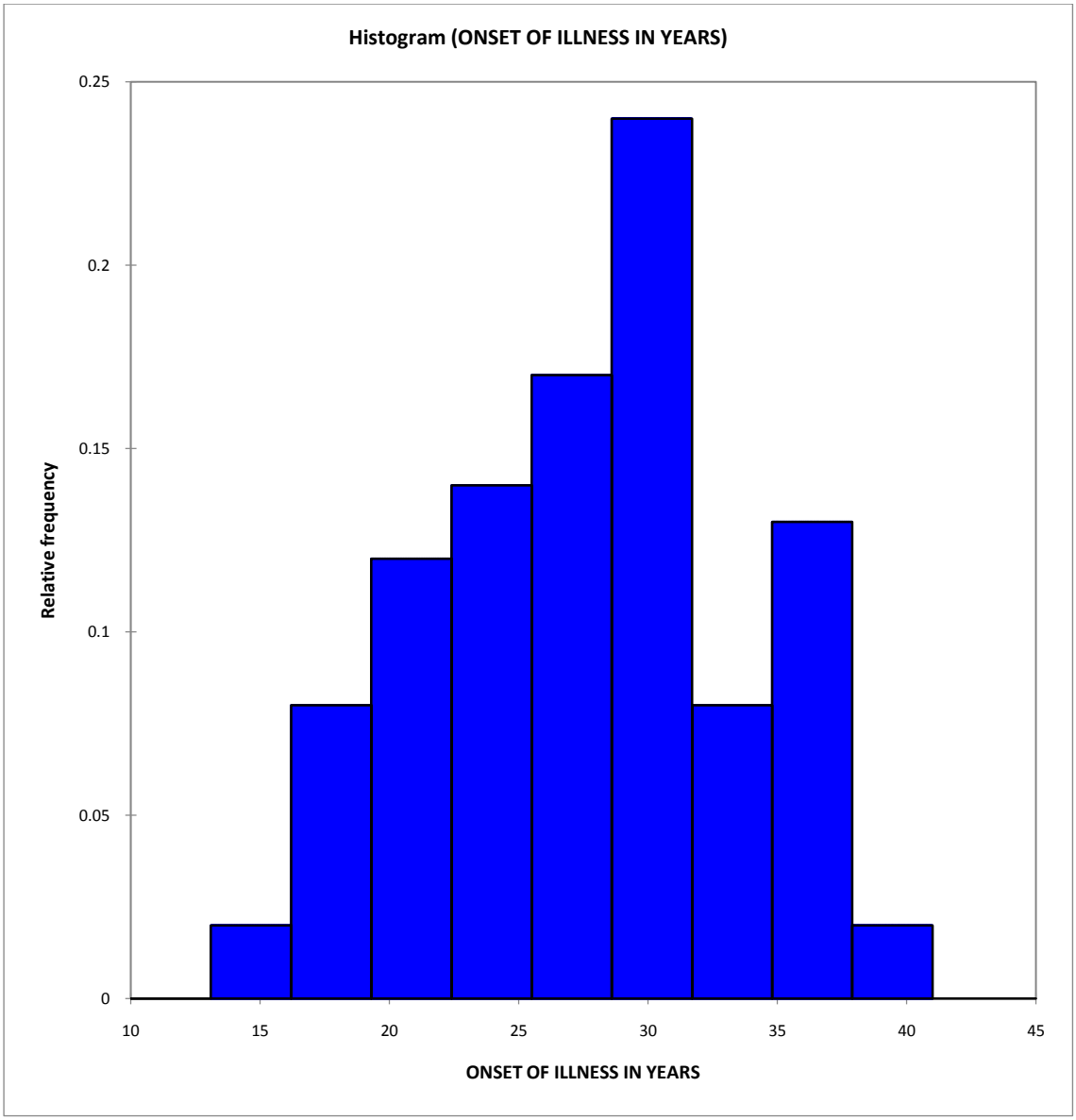
Table - 3 Clinical Data of the Study Group

		n=100	**n %**
Typical Anti Psychotics	Typical	16	16.00%
	Atypical	45	45.00%
	Both	39	39.00%
Depot	Yes	27	27.00%
	No	73	73.00%
Drug Compliance	Good	61	61.00%
	Poor	39	39.00%
Hospitalisation	Yes	66	66.00%
	No	34	34.00%
ECT	Yes	2	2.00%
	No	98	98.00%
Substance Use	Yes	33	33.00%
	No	67	67.00%
Co- morbid Illness	Yes	7	7.00%
	No	93	93.00%

The above table shows that 45 samples were on atypical antipsychotics, 16 samples were on typical antipsychotics and 39 on a combination of drugs. drug compliance was good in 61 subjects and 66 % were hospitalied. Substance use was present in 33%. The table shows 27 were getting parenteral

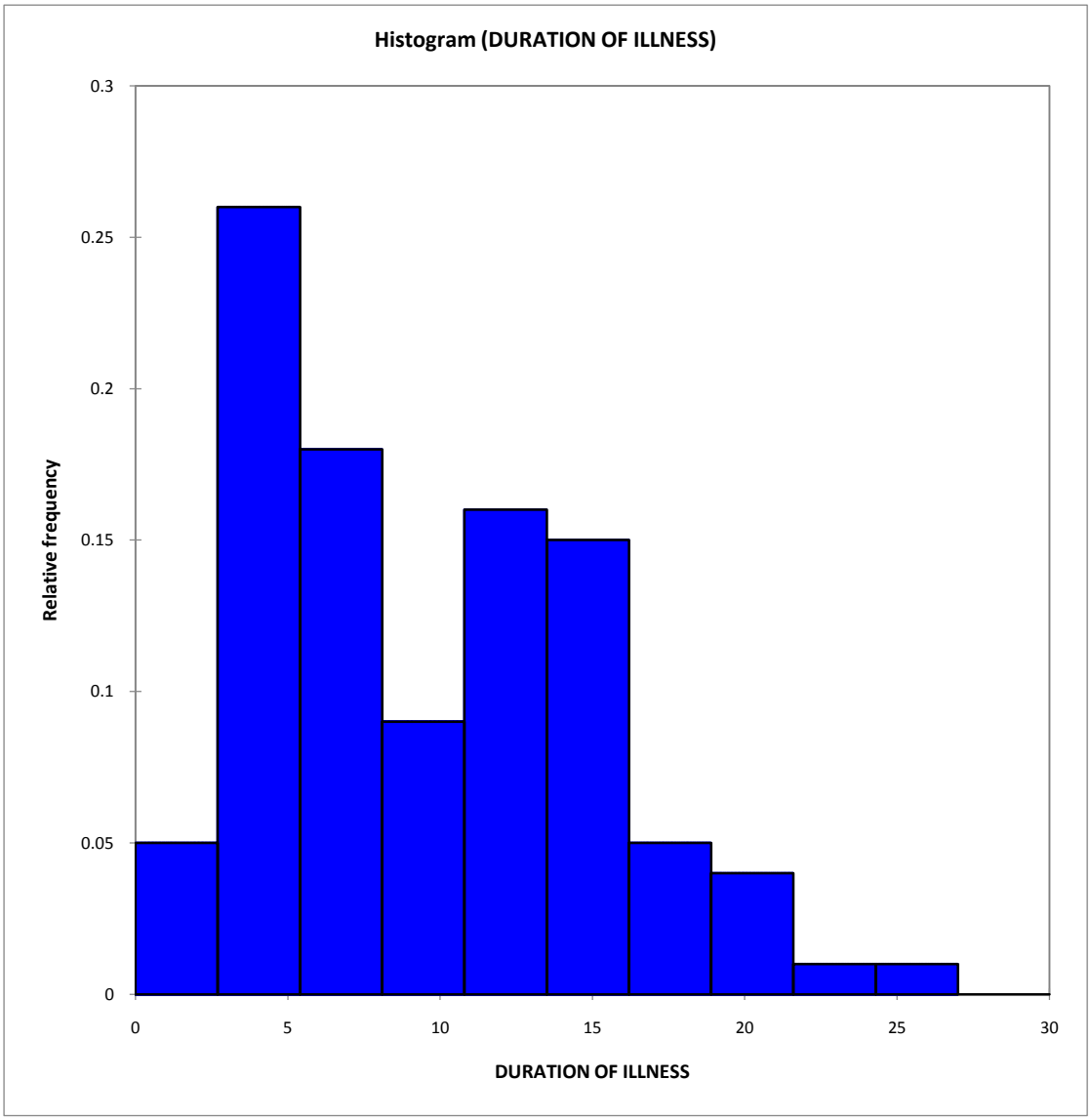
antipsychotics, 66 were hospitalised. It is to important to note drug compliance, hospitalisation and substance use were having significant relationship with functionally remission from schizophrenia

Graph - 4 Distribution of onset of illness of the Study Group



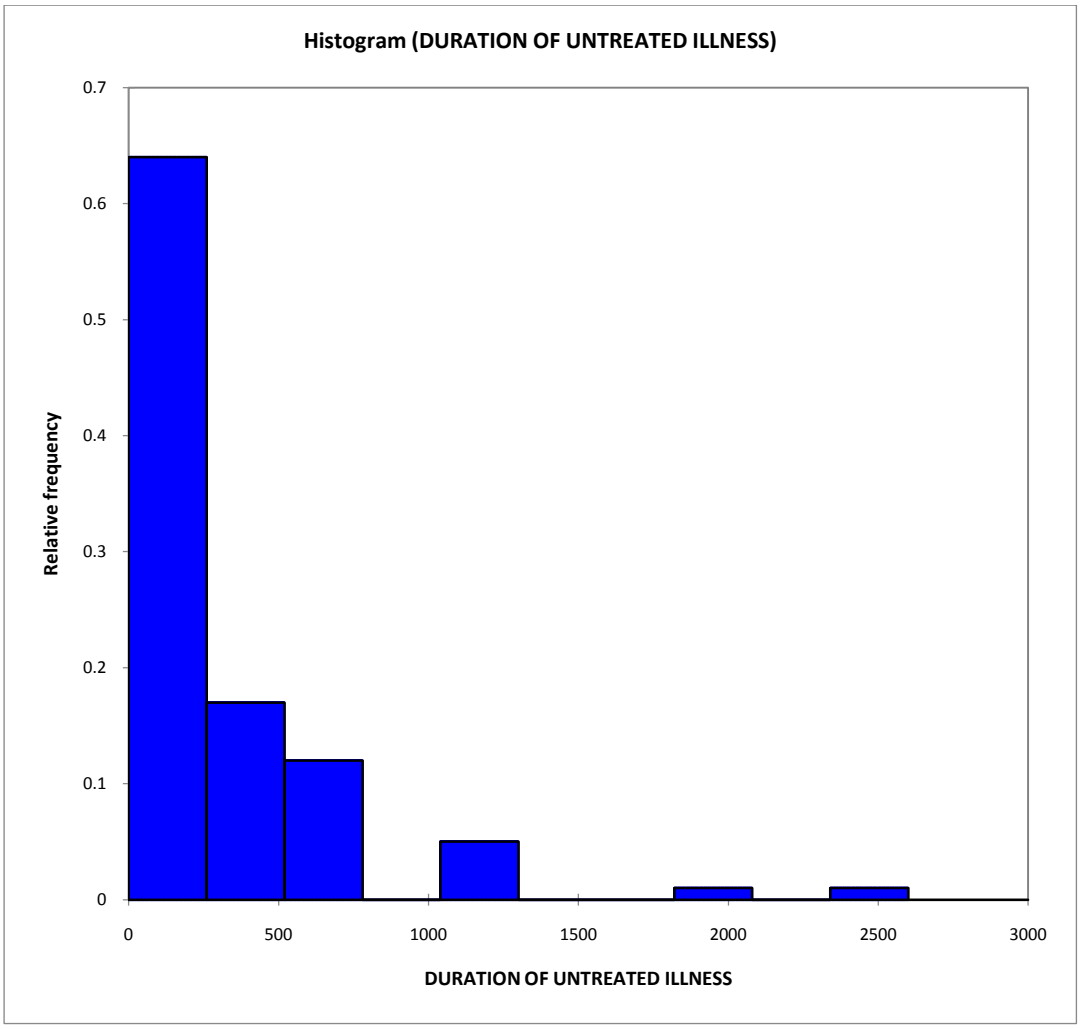
The above graph shows that the age of onset of the illness ranged from 15 years to 40 years. Mean age of onset was around 27-28 years.

Graph - 5 Distribution of Duration of illness of the Study Group



The above graph shows that the duration of illness distribution. It ranged from 2 years to 26 years. Mean duration of illness in the study group was 9.69 years.

Graph - 6 Distribution of untreated illness of the Study Group



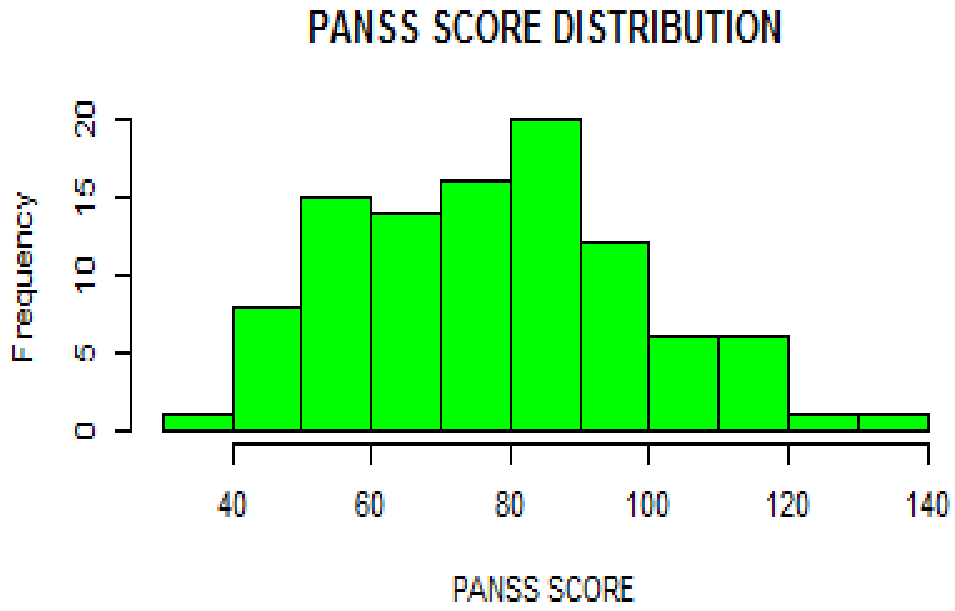
The above graph shows that the duration of untreated illness. It ranged from 7 days to 7 years. The mean was found to be 298 days i.e., around 10 months.

Table - 4 Illness Characteristics of the Study Group

	Mean	**Minimum**	**Maximum**	**Median**
PANSS-T	78.06	39.00	131.00	78.50
Positive	15.13	7.00	30.00	15.00
Negative	21.89	10.00	38.00	22.00
Dep/Anxiety	15.22	8.00	24.00	14.50
GAF	61.82	30.00	92.00	62.00
CGI	3.46	1.00	6.00	3.00

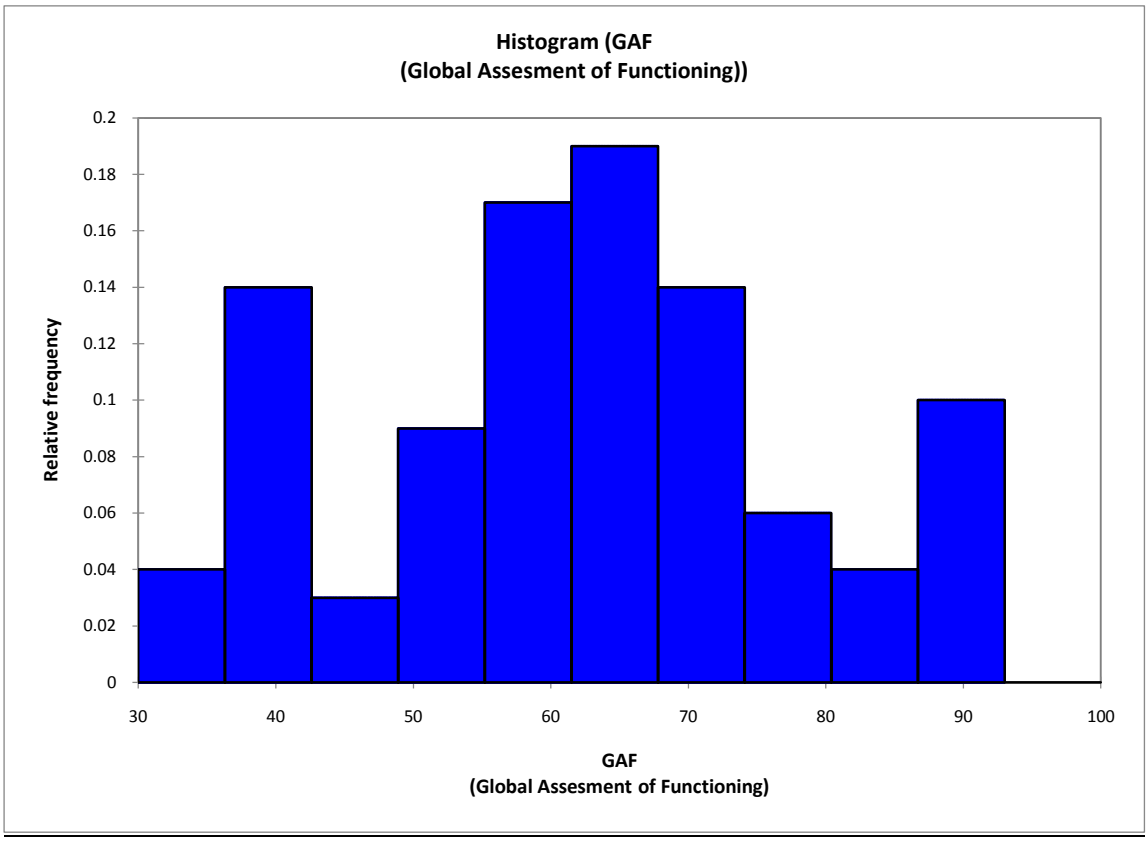
The above table shows that the mean PANSS score was 70. It ranged from minimum of 39 to maximum of 131. Global Assessment of Functioning score ranged from 30- 92. Median was 62. Mean for CGI scale was 3.46.

Graph - 7 PANSS Score Distribution of the Study Group



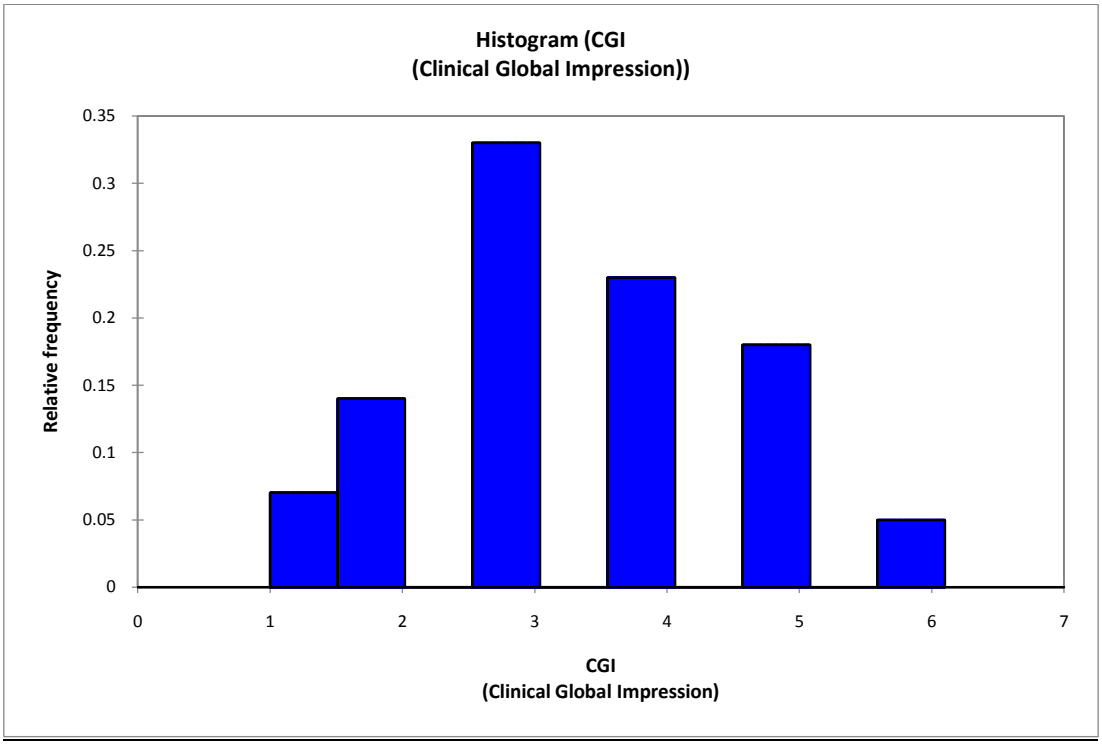
The above graph shows that the PANSS score distribution of the study group. The score ranged from 39 to 131.The mean score was 78.

Graph - 8 GAF Score Distribution of the Study Group



The above graph shows that the global functioning scale score distribution in the study group. The score ranged from 30 to 92. The median score was 62.

Graph - 9 CGI Score Distribution of the Study Group



The above graph shows that the CGI score was prominent at frequency above 25 % and the same is significant at 3.

Table - 5 Comparison of Sex Distribution between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Sex	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
Male	23 (51.1%)	30 (54.5%)	0.732
Female	22 (48.9%)	25 (45.5%)	

The above table shows the sex distribution among functionally remitted and non-remitted patients. There was no significance between both the groups.

Table - 6 Comparison of Educational Status between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Education	(n=100)		
	Functionally Remitted YES(n=45)	Functionally Non-Remitted (n=55)	p VALUE
Below 10th Std	12 (26.7%)	29 (52.7%)	0.008
Above 10th Std	33 (73.3%)	26 (47.30%)	

The above table shows the educational status between both the groups. There was no significance between the two groups.

Table - 7 Comparison of Occupational Status between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Occupation	(n=100)		
	Functionally Remitted YES(n=45)	Functionally Non-Remitted (n=55)	p VALUE
Unemployed	17 (37.8%)	36 (65.50%)	0.013
Unskilled	4 (8.9%)	5 (9.10%)	
Skilled	24 (53.3%)	14 (25.5%)	

The above table shows the occupational status between the two groups. There was no significance noticed between the two groups.

Table - 8 Comparison of Marital Status between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Marital Status	(n=100)		
	Functionally Remitted YES(n=45)	Functionally Non-Remitted (n=55)	p VALUE
Separated	0 (0%)	1 (1.80%)	0.094
Divorced	1 (2.2%)	7 (12.70%)	
Married	35 (77.8%)	30 (54.5%)	
Unmarried	9 (20%)	16 (29.1%)	
Widower	0 (0%)	1 (1.8%)	

The above table shows the marital status of the two groups. There was no significance noticed in this variable.

Table - 9 Comparison on the basis of Religion between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Religion	(n=100)		
	Functionally Remitted YES(n=45)	Functionally Non-Remitted (n=55)	p VALUE
Christian	6 (13.3%)	5 (9.1%)	0.743
Hindu	38 (84.4%)	48 (87.30%)	
Muslim	1 (2.2%)	2 (3.60%)	

The above table shows the comparison on the basis of religion. There was no significance in the test performed in the religion variable.

Table - 10 Comparison of Socio-economic Status between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Socio Economic Status	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
High	2 (4.4%)	0 (0%)	0.013
Low	30 (66.7%)	49 (89.1%)	
Middle	13 (28.9%)	6 (10.9%)	

The above table shows 67% of functionally remitted patients were from low socio economic status, 29% from middle socio economic status and only 4.4% from high socio economic status. In the functionally non remitted group and 89% of them belonged to low socio economic status, 10.9% belonged to middle socio economic status and none belonged to high socio economic status. There was no significance between the two groups.

Table - 11 Comparison of family Type between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Type of Family	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
Joint	20(44.4%)	35 (63.6%)	0.084
Nuclear	25(55.6%)	19 (34.5%)	
Single	0(0%)	1 (1.80%)	

The above table shows that 55% of functionally remitted lived as nuclear family and 20% as joint family. In functionally non remitted group 19% lived as nuclear family and 35% of them lived as joint family. There was no significance in the type of family in both groups.

Table - 12 Comparison on the basis of Social Support between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Social Support	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
Good	43(95.6%)	26 (47.30%)	< 0.001
Poor	2(4.4%)	29 (52.70%)	

The above table shows social support was good in 96% of the functionally remitted patients. Only 47% of functionally non-remitted had good social support. There was a significant relationship between social support and functional remission in the study group.

Table - 13 Comparison on the basis of Antipsychotic intake between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Anti Psychotics	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
Typical	10 (22.2%)	6 (10.2%)	<0.001
Atypical	29 (64.4%)	16 (29.10%)	
Both	6 (13.30%)	33 (60%)	

The above table shows that there is significant difference in patients on drugs. There was significant difference in patients on atypical antipsychotic drugs. 64% remitted patients were on atypical antipsychotics. 29% non-remitted patients were on atypical antipsychotics.

Table - 14 Comparison on the basis of Depot between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Depot	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
YES	2 (4.4%)	25 (45.50%)	<0.001
NO	43 (95.6%)	30 (54.0%)	

The above table shows that patients who were not on parenteral depot preparations had remitted functionally well.

Table - 15 Comparison on the basis of Drug Compliance between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Drug Compliance	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
Good	42 (93.3%)	19 (34.50%)	<0.001
Poor	3 (6.7%)	36 (65.0%)	

The above table shows that functionally remitted patients were on regular medication which is shown in the table above. Test of significance shows a positive value.

Table - 16 Comparison of Hospitalisation between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Hospitalisation	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
Yes	18 (40.0%)	48 (87.30%)	<0.001
NO	27 (60.0%)	7 (12.7%)	

The above table shows less or no hospital admission showed remission in patients with schizophrenia. 60% of the functionally remitted patients had no inpatient treatment. 7% of the non remitted patients had no hospital admission. The results shows significant p-value between the two groups.

Table - 17 Comparison on the basis of ECT between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

ECT	Functionally Remitted (n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
YES	0 (0%)	2 (3.6%)	0.196
NO	45 (100.0%)	53 (96.4%)	

The above table shows that electro Convulsive Therapy is given for the patients who have not responded to pharmacotherapy. In our sample only 2 patients were given ECT. There is no significance noticed between the two groups.

Table - 18 Comparison on the basis of Substance Use between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Substance Use	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
YES	8 (95.6%)	25 (45.50%)	<.001
NO	37 (82.2%)	30 (54.5%)	

The above table shows that substance use had a significant role in functional remission. 25 patients out of the 33 patients who were using substances did not improve functionally. Most commonly used substances were alcohol, nicotine and tobacco.

Table - 19 Comparison of Co - morbid Illness between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

Co - morbid Illness	(n=100)		
	Functionally Remitted (n=45)	Functionally Non-Remitted (n=55)	p VALUE
YES	3 (6.7%)	4 (7.30%)	0.093
NO	42 (93.3%)	51 (92.70%)	

The above table shows that only 7 patients in the study group had co-morbid illness which did not show any significance in the study.

Table - 20 Comparison of Socio-Economic Status and Illness Characteristics between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

	Functionally Remitted (n=45)			Functionally Non-Remitted (n=55)		
	Mean	Minimum	Maximum	Mean	Minimum	Maximum
Age	35.71±7.67	19	48	38.22±7.2	25	50
Income*	10162.79 ±9242.58	3000	50000	6181.82 ±5064.92	2000	20000
Onset of illness-Yrs*	28.76±5.58	17	40	26.47±5.43	15	35
DOI-Yrs**	7.02±4.37	2	20	11.87±5.21	3	26
DUI**	110±149	10	730	452±479	7	2555
No of Times**	1.67±0.97	1	4	3.17±1.29	1	7

- ** Indicates significance at the level of p value <0.005*
- *** Indicates significance at the level of p value <0.001*

The above table shows that age, Income, and onset of the illness did not have significance in the study sample. Duration of onset illness, Duration of Untreated illness, and the number of admissions to the hospital had favourable significance in functional remission. Mean duration of untreated illness was 110 days in remitted patients while it was 455 days for the unremitted group.

Table - 21 Comparison of PANSS-T Score between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

	Functionally Remitted (n=45)			Functionally Non-Remitted (n=55)		
	Mean	Minimum	Maximum	Mean	Minimum	Maximum
PANSS-T**	62.33 ± 12.33	39	88	90.93 ± 16.85	43	131
*Positive***	11.58 ± 2.87	7	18	18.04 ± 5.57	8	30
*Negative***	16.64 ± 4.18	10	25	26.18 ± 5.54	14	38
*Dep/Anxiety***	13.36 ± 2.89	8	21	16.75 ± 3.74	8	24
*GAF***	75.42 ± 9.96	62	92	50.69 ± 10.03	30	70
*CGI***	2.38 ± 0.75	1	3	4.35 ± 0.87	3	6

- ** Indicates significance at the level of p value <0.005*
- *** Indicates significance at the level of p value <0.001*

The above table shows that mean positive score was 12 in remitted and 18 in non remitted patients. Negative score on PANSS was 17 in remitted and 26 in non remitted patients. Mean GAF score was 75 in remitted patients and 51 in non remitted patients. Remitted patients scored a mean of 2 in CGI and non-remitted a score of 4.

Table - 22 Comparison of FROGS Score between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

	Functionally Remitted (n=45)			Functionally Non-Remitted (n=55)		
	Mean	Minimum	Maximum	Mean	Minimum	Maximum
FROGS-Total**	59.29 ± 10.26	39	83	37.36 ± 8.97	21	58
Daily Life-Total**	19.29 ± 2.89	12	24	12.91 ± 2.97	7	20
*Personal Care***	4.51 ± 0.51	4	5	3.42 ± 0.63	2	4
*Diet***	4.38 ± 0.58	3	5	3.38 ± 0.62	2	4
*House Work***	3.8 ± 0.66	2	5	2.35 ± 0.78	1	4
*AFM***	3.56 ± 0.97	1	5	2.04 ± 0.77	1	4
*Travel &Com***	3.18 ± 0.89	1	5	1.75 ± 0.78	1	4
Activities-Total**	9.53 ± 2.02	5	14	5.65 ± 2.06	3	11
*Personal***	3.51 ± 0.84	2	5	2.2 ± 0.87	1	4
*Social***	3.2 ± 0.73	2	5	1.82 ± 0.77	1	4

Study/Work*	**2.82 ± 0.75**	**1**	**4**	**1.62 ± 0.65**	**1**	**3**
Relationships-Total**	**13.42 ± 3.29**	**7**	**21**	**7.78 ± 2.19**	**5**	**15**
Family*	**3.33 ± 0.85**	**1**	**5**	**2.09 ± 0.65**	**1**	**4**
Love/Sexual Life*	**1.93 ± 0.81**	**1**	**4**	**1.18 ± 0.39**	**1**	**2**
Social Network*	**2.89 ± 0.8**	**1**	**4**	**1.6 ± 0.66**	**1**	**3**
Abs#ViolentBeh*	**2.67 ± 0.8**	**1**	**4**	**1.42 ± 0.6**	**1**	**3**
Empathy*	**2.6 ± 0.81**	**1**	**4**	**1.45 ± 0.6**	**1**	**3**

Table - 23 Comparison of FROGS Scale between Functionally Remitted and Functionally Non-remitted Samples of the Study Group

	Functionally Remitted (n=45)			Functionally Non-Remitted (n=55)		
	Mean	Minimum	Maximum	Mean	Minimum	Maximum
Qlty#ofAdp-Total**	9 ± 1.8	6	13	5.58 ± 1.55	3	9
*Mgmt#ofIllness& Trt**	3.36 ± 0.65	2	5	2.24 ± 0.67	1	4
*Adpt#to Stress**	3.02 ± 0.66	2	4	1.78 ± 0.6	1	3
*Self Esteem**	2.64 ± 0.71	2	4	1.56 ± 0.6	1	3
Health &Trt-Total**	7.96 ± 1.97	5	13	5.36 ± 1.35	3	8
*Personal Health**	3.07 ± 0.75	1	5	2.18 ± 0.55	1	3
*Biological Rhythm**	2.89 ± 0.68	2	4	2 ± 0.67	1	3
*Sec# Effects of Trt**	2 ± 0.74	1	4	1.18 ± 0.39	1	2

The above tables show the results of functional remission scale of general schizophrenia. The mean total score in remitted patients were 60 and the non-remitted scored a mean of 37. The score on different areas differ in both the groups. Even the remitted group scored less in the relationship domain.

DISCUSSIONS

The aim and objective of our study is to analyse functional remission in patients with schizophrenia and to determine the variables favouring functional remission in schizophrenic patients. The socio demographic profile and clinical data were compared between functionally remitted and non remitted patients.

In our study, the functional remission in people with schizophrenia was studied using standard scales. Individuals who have attained remission in the core symptoms of schizophrenia i.e less than 3 in the PANSS score (symptom remission), more than 60 in the Global functioning score and less than 3 score on CGI scale(clinical remission) were considered as functionally remitted patients.

In our study, out of 100 patients, symptom remission was achieved by 70 patients, 60 of them had scored above 60 in global functioning scale and 54 of them had attained clinical remission. Further, I have analysed three domains of remission, i.e., symptom remission, functional remission and clinical remission. But, only 45 of the total patients in the study group have achieved remission in all three domains.

In our study, majority of the subjects of the study group belonged to the age group, 30 - 50 years of age. Mean age of the study group is 37 years and both the functionally remitted and non-remitted groups have

same mean age and in the study group there was very little difference in the mean age in both groups. Hence, in our study, dependence on study of other factors such as sex, education, socio-economic status, etc. was inevitable. Further, no difference was seen in both males and females in both the remitted and non remitted groups. Besides, 79 percent of the study population belonged to low socio economic status and only 2 percent belonged to high socio economic background.

In our study, no big difference is noticed between socio economic status and functional remission. The reason could be that majority of the study group were from low socio economic status and only two of them were from high socio economic status. Since, the sample was collected from Government Institutional hospital which is mostly utilised by people from low socio-economic status, the comparison with people from high socio economic status was not possible. A better comparison could have been made if the sample had a comparable size of samples from higher socio economic status. But, in the study conducted by Kelly et al during 2005, patients from lower socio-economic status had poor functional outcome. They had early onset of illness and longer duration of untreated illness which led to poor functional remission.

In our study, out of 100 samples in our study group, 25 subjects were married and among them 16 patients did not show functional improvement. Besides, in the tests administered by us, marriage did not show any significance. However, in certain studies marriage had a

favourable outcome whereas other studies did not find such significant relationship.[48]

In our study, occupation did not play a major role in remission in patients with schizophrenia, this could be due to the type of work, stress at work place that could lead to behavioural disturbance and poor functional outcome. However, in the study conducted by Milton et al, unemployed were aggressive and showed poor prognosis. Further, the study conducted by Valencia et al during 2015 predicted that being employed (P-value 0.010) resulted in good functional remission.

In our study, social support had shown significance in functional remission in patients with schizophrenia. The IPSS and DOSMED studies had demonstrated the role of cultural factors in schizophrenia. The results on remission in different cultural areas are similar to our study. In the study conducted by Verghese A et al, it was predicted that there was remission in 66% of patients and lack of financial difficulties, short period of illness, drug compliance, supportive attitude of family and society at large were associated with positive outcome.[49&50] The paper published by Saravanan et al from Vellore predicted the good prognosis of the illness and improvement in functional outcome in South India was on account of the local cultural factors, insight, family support and community support prevailing in high-context cultures like that in South India. [51]

In our study, functionally remitted patients had 96% good social support while 47% of non-remitted had good social support. (P-value = less than 0.001). Drug compliance and less number of hospitalisation showed significant relationship with functional remission. However, the favourable results in non-western countries like India is explained by factors like family support, positive attitudes among family members and the society, styles of interaction, longstanding marriage, non stressful and unskilled work and supportive relatives, friends and colleagues. The results of our study, when compared with studies conducted in other countries favours the impact of cultural factors and social support in functional remission of patients with schizophrenia. The study by Rebecca et al and Nasrallah were identical with our study favouring good adherence to drugs and no or less number of admission in hospital.

Our study showed significant relevance in achieving functional remission of patients with schizophrenia, many other studies also have reported that duration of illness and duration of untreated psychosis has a significant impact on remission. In our study, duration of untreated psychosis ranged from 7 days to 7 years. The mean was 3 - 4 months in remitted patients while it was more than a year of untreated illness in functionally non-remitted patients. PANSS score had a positive role on functional remission in our study group. Low positive and negative symptom domains had an influence on functional outcome of patients

with schizophrenia. As the PANSS score increased, the Global functional assessment Scale score was on a decline. Some studies have reported the reverse, but our study shows that functional remission was achieved in patients under symptomatic remission of patients with schizophrenia. FROGS scale which was used in our study showed that patients improved in self care and hygiene (daily activities) but, the scores were low in areas like relationships, sexual life, financial management and social network. Though functionally remitted as per our study design, they lagged behind in social relationships. This clearly indicates the need to revise the criteria for functional remission as multi dimensional approach is a needed in all future studies.

CONCLUSIONS

- Nearly half the number of patients with schizophrenia achieved functional remission.
- Social support, less duration of untreated illness, drug compliance and less number of hospitalisation are the factors determining functional remission in patients with schizophrenia.
- There is significant relationship between social support and functional remission of patients with schizophrenia.
- Age, sex, marital status and economic status had no significant impact on functional remission of patients with schizophrenia.
- Less duration of untreated illness, drug compliance and less number of hospitalisation have significant impact on functional remission of patients with schizophrenia.
- Higher symptomatic remission has significant relationship with functional remission in patients with schizophrenia.

LIMITATIONS OF THE STUDY

Study design limitations:-

- This is a cross sectional study where data regarding functional remission in patients with schizophrenia was obtained at a single point of time. But functional remission changes as time progresses depending on various factors of day to day life.
- In this thesis oriented study the sample selected, the scales given and data collection were done by a single investigator who was not blinded.
- Patients with Schizophrenia from the Institute of Mental Health, Chennai, formed the main research subjects leaving a smaller representation of patients from the general community.
- The majority of the subjects were from Low socio economic status and middle income group since the Institute of Mental Health, Chennai caters to this subset of patients in general.

RECOMMENDATIONS

1. Functional Remission is a dynamic construct. Hence, a longitudinal study design is recommended. This can help in the careful monitoring of determinants of functional remission.

- ✓ New rating scales measuring different areas of functioning with good reliability and validity should come up as functionality involves various dimensions.
- ✓ The study can be done in multiple centres including private hospitals for broader inclusion and varied outcome.
- ✓ Study involving larger sample size is required for a refined analysis of the factors determining functional remission in patients with schizophrenia.
- ✓ Studies on functional remission in India are very few. Hence, more studies should be encouraged.
- ✓ Emphasis should be focused on social remission in schizophrenia.
- ✓ Functional remission is multifactorial in nature. When treatment is planned it should be emphasized to symptomatic, functional and psycho social remission as an outcome variable.w

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INFORMATION SHEET

I. Title of the study - **A study on the factors determining functional remission in patients with schizophrenia.**

II. Name of the Investigator - **T. Merolin Jaya Sheela**

III. Details of Participant - Serial No. - **Outpatient No. -**

i. Name - **ii. Age -**

iii. Sex -

iv. Address -

v. Telephone No. -

IV. Place of study - **Institute of Mental Health, Chennai - 600 010.**

- We are conducting a study on factors determining functional remission among patients attending Institute of Mental health, Madras medical college, Chennai - 600 003 and we value your participation in this study.

  - The purpose of this study is to assess functional remission and to identify predictive factors for functional remission in schizophrenic patients with the help of certain special scales. It may take 45 minutes to 1 hour to administer these scales and to gather information from you for this study.

  - The identity of the patients in this research will be kept confidential throughout this study. In the event of any publication or presentation resulting from the research, no personal data will be shared with others.

  - Taking part in this study is purely voluntary. You are at liberty to decide whether to participate in this study or to withdraw from this study at any time, your decision will not result in any loss of benefits in this hospital to which you are otherwise entitled.

  - The results of this study will be intimated to you at the end of the study.

Signature of the Investigator **signature/thumb impression**
Date **of the Participant**

INFORMED CONSENT FORM

I. Title of the study - **A study on the factors determining functional remission in patients with schizophrenia.**

II. Name of the Investigator - **T. Merolin Jaya Sheela**

III. Details of Participant - Serial No. - **Outpatient No. -**

i. Name - **ii. Age -**

iii. Sex -

iv. Address -

v. Telephone No. -

IV. Place of study -**Institute of Mental Health, Chennai - 600 010.**

I, , have read the information in this consent form (this consent form has been read out to me) and the investigator clarified all my doubts. I am over 18 years of age and I, hereby, voluntarily give my consent to be included as a participant in this study in detail as follows:-

1. I have read and understood this consent form and the information sheet provided to me by the investigator.

2. I have had this consent form and the information sheet explained to me.

3. I have understood the nature of the study.

4. I have understood my rights and responsibilities, while participating in this study.

5. I have informed the investigator about all the treatments I have had till now.

6. I have been advised about the risks associated with my participation in this study.

7. I have not participated in any study during the past months.

8. I am aware of the fact that I can opt out of this study at any time without giving any reason for doing so and this will not affect my future treatment in this hospital.

9. I am aware of the fact that the investigator may terminate my participation in this study, at any time for any reason without my consent.
10. I hereby give permission to the investigator to release the information gathered from me during this study to the Higher Authorities and the Ethics Committee. I understand that they may inspect my original records.

11. I understand that my identity will be kept confidential, if the data gathered from me are publicised.

12. I have got all my doubts clarified to my satisfaction.

13. I have voluntarily decided to participate in this study.

I am aware of the fact that if I have doubts during this study, I should clarify with the investigator. By signing this consent form, I attest that the information given in this consent form has been clearly explained to me and I have understood the same. I have collected a copy of this consent form.

Name of the Participant	**Signature/thumb impression of the Participant**	**Date**
Name of the Impartial Witness	**Signature/thumb impression of the Impartial Witness**	**Date**
Name of the Investigator	**Signature of the Investigator**	**Date**

ஆராய்ச்சியில் பங்கேற்பவருக்கு கொடுக்கும் தகவல்

I. தலைப்பு	-	மனச்சிதைவு நோயாளிகள் குணமடைந்து செயல்படுதலை நிர்ணயிக்கும் காரணிகள்குறித்த ஒரு ஆராய்ச்சி.
II. ஆராய்ச்சியாளரின் பெயர்	-	தொ. மெரோலின் ஜெய ஷீலா
III. பங்கு பெறுபவர் பற்றிய தகவல்கள் - வரிசை எண்	-	வெளி நோயாளி எண் -
i. பெயர்	-	
ii. வயது		
iii. பாலினம்	-	
iv. முகவரி	-	
v. தொலைபேசி எண்	-	
IV. பங்கு பெறும் இடம்	-	அரசு மனநல காப்பகம், சென்னை - 600 010.

- மனச்சிதைவு நோயாளிகள் குணமடைந்து செயல்படுதலை நிர்ணயிக்கும் காரணிகள் குறித்த ஒரு ஆராய்ச்சி மேற்கொள்கிறோம். இந்த ஆராய்ச்சியில் நீங்கள் பங்கேற்பது எங்களுக்கு மிகுந்த பயனுள்ளதாக இருக்கும்.

- இந்த ஆராய்ச்சியின் நோக்கம் நீங்கள் மனச்சிதைவு நோயிலிருந்து குணமடைந்து எவ்வாறு செயல்படுகிறீர்கள் என்பதை நிர்ணயிக்கும் காரணிகளை கண்டறிவதாகும். இவற்றை சில அளவீடுகள் மூலம் உங்களிடம் கேட்டறிவதற்கு 45 விநாடிகள் முதல் ஒரு மணி நேரம் வரை ஆகலாம்.

- இந்த ஆராய்ச்சியில் நீங்கள் கொடுக்கும் உங்களைப் பற்றிய தகவல்கள் இரகசியமாக பாதுகாக்கப்படும். இந்த ஆராய்ச்சியை பற்றிய தகவல்கள் வெளியிடப்படுமானால், உங்களை பற்றிய சொந்த விபரங்கள் எங்கும் வெளியிடாமல் இரசியமாக பாதுகாக்கப்படும்.

- இந்த ஆராய்ச்சியில் நீங்கள் தானாக முன் வந்து மனமுவந்து கலந்து கொள்கிறீர்கள். இந்த ஆராய்ச்சியிலிருந்து நீங்கள் எந்த நேரத்திலும் விலகிக் கொள்ளலாம். இந்த ஆராய்ச்சியிலிருந்து விலகிக் கொள்வதால் உங்களுக்கு அளிக்கப்படும் சிகிச்சையில் எந்த வித பாதிப்பும் ஏற்படாது. எனினும், இந்த ஆராய்ச்சியிலிருந்து நீங்கள் விலகுவதற்கு முன்பு ஆராய்ச்சியாளரிடம் தெரிவிப்பது நல்லது.

- இந்த ஆராய்ச்சியின் முடிவுகள் ஆராய்ச்சியின் முடிவில் உங்களிடம் தெரிவிக்கப்படும்.

பங்குபெறுபவரின் கையொப்பம்/கைரேகை

இடம்:
நாள்: ஆராய்ச்சியாளரின் கையொப்பம்

ஆராய்ச்சி ஒப்புதல் படிவம்

I. தலைப்பு	-	மனச்சிதைவு நோயாளிகள் குணமடைந்து செயல்படுதலை நிர்ணயிக்கும் காரணிகள்குறித்த ஒரு ஆராய்ச்சி.
II. ஆராய்ச்சியாளரின் பெயர்	-	தொ. மெரோலின் ஜெய ஷீலா
III. பங்கு பெறுபவர் பற்றிய தகவல்கள்	-	
வரிசை எண்	-	வெளி நோயாளி எண் -
i. பெயர	-	
ii. வயது	-	
iii. பாலினம்	-	
iv. முகவரி	-	
v. தொலைபேசி எண்	-	
IV. பங்கு பெறும் இடம்	-	அரசு மனநல காப்பகம், சென்னை - 600 010.

நான் இந்த படிவத்தை முழுவதுமாக படித்து (படித்து காட்டப்பட்டது) தெரிந்து கொண்டதோடு, என் சந்தேகங்களையும் தெளிவு படுத்திக் கொண்டேன். நான் பதினெட்டு வயதிற்கு மேற்பட்டவர் என்பதையும், இந்த ஆராய்ச்சியில் பங்கு பெறுவதற்கு எனக்கு முழு சம்மதம் என்பதையும் கீழ்க்கண்டவாறு விபரமாக தெரிவித்துக் கொள்கின்றேன்:-

1. நான் இந்த ஆராய்ச்சி ஒப்புதல் படிவம் மற்றும் ஆராய்ச்சி தகவல் படிவங்களிலுள்ள அனைத்து விவரங்களையும் படித்து அறிந்து கொண்டேன்.

2. இந்த ஆராய்ச்சி ஒப்புதல் படிவம் மற்றும் ஆராய்ச்சி தகவல் படிவங்களிலுள்ள அனைத்து விவரங்களும் எனக்கு விவரித்து கூறப்பட்டது.

3. இந்த ஆராய்ச்சியை பற்றிய முழு விவரங்களையும் புரிந்து கொண்டேன்.

4. என்னுடைய உரிமைகள் மற்றும் பொறுப்புகள் எல்லாவற்றையும் ஆராய்ச்சியாளர் மூலம் அறிந்து கொண்டேன்.

5. நான் இதுவரை எடுத்துக் கொண்ட அனைத்து சிகிச்சைகளையும் ஆராய்ச்சியாளரிடம் தெரியப் படுத்தியுள்ளேன்.

6. இந்த ஆராய்ச்சியில் பங்கு பெறுவதின் மூலம் எனக்கு ஏற்படும் விளைவுகளை அறிந்து கொண்டேன்.

7. நான் கடந்த மாதங்களில் வேறு எந்த வித ஆராய்ச்சிகளிலும் பங்கு பெறவில்லை.

8. நான் எந்த நேரத்திலும் இந்த ஆராய்ச்சியிலிருந்து விலகிக் கொள்ளலாம் என்பதையும், நான் இந்த ஆராய்ச்சியிலிருந்து விலகிக் கொள்வதால் எனக்கு அளிக்கப்படும் சிகிச்சையில் எந்த விதமான பாதிப்பும் ஏற்படாது என்பதையும் ஆராய்ச்சியாளர் மூலம் அறிந்து கொண்டேன்.

9. மேலும், எந்த நேரத்திலும் எந்த காரணத்திற்காகவும் இந்த ஆராய்ச்சியில் பங்கு பெறுவதிலிருந்து ஆராய்ச்சியாளர் என்னை நீக்கலாம் என்பதையும் அறிந்துள்ளேன்.
10. இந்த ஆராய்ச்சியின் மூலம் என்னிடமிருந்து பெறப்பட்ட தகவல்களை ஆராய்ச்சியாளர் அவருடைய உயர் அதிகாரிகள் மற்றும் நெறிமுறை குழுவினரிடம் தெரியப் படுத்த சம்மதிக்கின்றேன். அவர்கள் என்னுடைய முழு தகவல்களையும் ஆய்வு செய்ய கூடும் என்பதை அறிந்து கொண்டேன்.

11. இந்த ஆராய்ச்சியை பற்றிய தகவல்கள் வெளியிடப்படுமானால், என்னை பற்றிய சொந்த விபரங்கள் இரசியமாக பாதுகாக்கப்படும் என்பதை அறிந்து கொண்டேன்.

12. என்னுடைய எல்லா சந்தேகங்களையும் திருப்திகரமாக தெளிவு படுத்திக் கொண்டேன்.

13. நான் தானாக முன் வந்து இந்த ஆராய்ச்சியில் பங்கு பெற முடிவு செய்துள்ளேன்.

இந்த ஆராய்ச்சியின் போது எனக்கு ஏற்படுகின்ற சந்தேகங்களை ஆராய்ச்சியாளரிடம் கேட்டு தெளிவு படுத்திக் கொள்ள வேண்டும் என்பதை அறிவேன். இந்த படிவத்தில் கையொப்பமிடுவதன் மூலம் இந்த படிவத்தில் கொடுக்கப்பட்டுள்ள எல்லா தகவல்களும் தெளிவாக விளக்கப்பட்டது என்றும், அதை நான் தெளிவாக புரிந்து கொண்டேன் என்றும் சான்றளிக்கின்றேன். நான் இந்த படிவத்தின் நகலை பெற்றுக் கெண்டேன்.

பங்குபெறுபவரின் பெயர்	பங்குபெறுபவரின் கையொப்பம்/கைரேகை	தேதி
நடுநிலை சாட்சியாளரின் பெயர்	நடுநிலை சாட்சியாளரின் கையொப்பம்/கைரேகை	தேதி
ஆராய்ச்சியாளரின் பெயர்	ஆராய்ச்சியாளரின் கையொப்பம்	தேதி

Socio - Demographic Profile

Name :

Age :

Sex :

OP No :

ID No :

Education :

Occupation :

Marital status :

Language :

Religion :

Address :

Socio economic status : **Income :**

Type of family :

Social support :

Clinical Data

Age of onset of illness :

Duration of illness :

Duration of untreated illness :

Treatment : Typical Antipsychotics

Atypical Antipsychotics

Drug compliance :

Hospitalisation: Yes/No **Numbers :** **Last :**

Substance use :

Co-morbid illness :

POSITIVE AND NEGATIVE SYNDROME SCALE (PANSS) RATING CRITERIA

GENERAL RATING INSTRUCTIONS

Data gathered from this assessment procedure are applied to the PANSS ratings. Each of the 30 items is accompanied by a specific definition as well as detailed anchoring criteria for all seven rating points. These seven points represent increasing levels of psychopathology, as follows:

1- absent

2- minimal

3- mild

4- moderate

5- moderate severe

6- severe

7- extreme

In assigning ratings, one first considers whether an item is at all present, as judging by its definition. If the item is absent, it is scored 1, whereas if it is present one must determine its severity by reference to the particular criteria from the anchoring points. The highest applicable rating point is always assigned, even if the patient meets criteria for lower points as well. In judging the level of severity, the rater must utilise a holistic perspective in deciding which anchoring point best characterises the patient's functioning and rate accordingly, whether or not all elements of the description are observed.

The rating points of 2 to 7 correspond to incremental levels of symptom severity:

- A rating of 2 (minimal) denotes questionable or subtle or suspected pathology, or it also may allude to the extreme end of the normal range.
- A rating of 3 (mild) is indicative of a symptom whose presence is clearly established but not pronounced and interferes little in day-to-day functioning.
- A rating of 4 (moderate) characterises a symptom which, though representing a serious problem, either occurs only occasionally or intrudes on daily life only to a moderate extent.
- A rating of 5 (moderate severe) indicates marked manifestations that distinctly impact on one's functioning but are not all-consuming and usually can be contained at will.
- A rating of 6 (severe) represents gross pathology that is present very frequently, proves highly disruptive to one's life, and often calls for direct supervision.
- A rating of 7 (extreme) refers to the most serious level of psychopathology, whereby the manifestations drastically interfere in most or all major life functions, typically necessitating close supervision and assistance in many areas.

Each item is rated in consultation with the definitions and criteria provided in this manual. The ratings are rendered on the PANSS rating form overleaf by encircling the appropriate number following each dimension.

PANSS RATING FORM

		absent	minimal	mild	moderate	moderate severe	severe	extreme
P1	Delusions	1	2	3	4	5	6	7
P2	Conceptual disorganisation	1	2	3	4	5	6	7
P3	Hallucinatory behaviour	1	2	3	4	5	6	7
P4	Excitement	1	2	3	4	5	6	7
P5	Grandiosity	1	2	3	4	5	6	7
P6	Suspiciousness/persecution	1	2	3	4	5	6	7
P7	Hostility	1	2	3	4	5	6	7
N1	Blunted affect	1	2	3	4	5	6	7
N2	Emotional withdrawal	1	2	3	4	5	6	7
N3	Poor rapport	1	2	3	4	5	6	7
N4	Passive/apathetic social withdrawal	1	2	3	4	5	6	7
N5	Difficulty in abstract thinking	1	2	3	4	5	6	7
N6	Lack of spontaneity & flow of conversation	1	2	3	4	5	6	7
N7	Stereotyped thinking	1	2	3	4	5	6	7
G1	Somatic concern	1	2	3	4	5	6	7
G2	Anxiety	1	2	3	4	5	6	7
G3	Guilt feelings	1	2	3	4	5	6	7
G4	Tension	1	2	3	4	5	6	7
G5	Mannerisms & posturing	1	2	3	4	5	6	7
G6	Depression	1	2	3	4	5	6	7
G7	Motor retardation	1	2	3	4	5	6	7
G8	Uncooperativeness	1	2	3	4	5	6	7
G9	Unusual thought content	1	2	3	4	5	6	7
G10	Disorientation	1	2	3	4	5	6	7
G11	Poor attention	1	2	3	4	5	6	7
G12	Lack of judgement & insight	1	2	3	4	5	6	7
G13	Disturbance of volition	1	2	3	4	5	6	7
G14	Poor impulse control	1	2	3	4	5	6	7
G15	Preoccupation	1	2	3	4	5	6	7
G16	Active social avoidance	1	2	3	4	5	6	7

SCORING INSTRUCTIONS

Of the 30 items included in the PANSS, 7 constitute a **Positive Scale**, 7 a **Negative Scale**, and the remaining 16 a **General Psychopathology Scale**. The scores for these scales are arrived at by summation of ratings across component items. Therefore, the potential ranges are 7 to 49 for the Positive and Negative Scales, and 16 to 112 for the General Psychopathology Scale. In addition to these measures, a Composite Scale is scored by subtracting the negative score from the positive score. This yields a bipolar index that ranges from –42 to +42, which is essentially a difference score reflecting the degree of predominance of one syndrome in relation to the other.

POSITIVE SCALE (P)

P1. **DELUSIONS** - Beliefs which are unfounded, unrealistic and idiosyncratic.

Basis for rating - Thought content expressed in the interview and its influence on social relations and behaviour.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Presence of one or two delusions which are vague, uncrystallised and not tenaciously held. Delusions do not interfere with thinking, social relations or behaviour.
4 **Moderate** - Presence of either a kaleidoscopic array of poorly formed, unstable delusions or a few well-formed delusions that occasionally interfere with thinking, social relations or behaviour.
5 **Moderate Severe** - Presence of numerous well-formed delusions that are tenaciously held and occasionally interfere with thinking, social relations and behaviour.
6 **Severe** - Presence of a stable set of delusions which are crystallised, possibly systematised, tenaciously held and clearly interfere with thinking, social relations and behaviour.
7 **Extreme** - Presence of a stable set of delusions which are either highly systematised or very numerous, and which dominate major facets of the patient's life. This frequently results in inappropriate and irresponsible action, which may even jeopardise the safety of the patient or others.

P2. **CONCEPTUAL DISORGANISATION -** Disorganised process of thinking characterised by disruption of goal-directed sequencing, e.g. circumstantiality, loose associations, tangentiality, gross illogicality or thought block.

Basis for rating - Cognitive-verbal processes observed during the course of interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Thinking is circumstantial, tangential or paralogical. There is some difficulty in directing thoughts towards a goal, and some loosening of associations may be evidenced under pressure.
4 **Moderate** - Able to focus thoughts when communications are brief and structured, but becomes loose or irrelevant when dealing with more complex communications or when under minimal pressure.
5 **Moderate Severe** - Generally has difficulty in organising thoughts, as evidenced by frequent irrelevancies, disconnectedness or loosening of associations even when not under pressure.
6 **Severe** - Thinking is seriously derailed and internally inconsistent, resulting in gross irrelevancies and disruption of thought processes, which occur almost constantly.
7 **Extreme** - Thoughts are disrupted to the point where the patient is incoherent. There is marked loosening of associations, which result in total failure of communication, e.g. "word salad" or mutism.

P3. **HALLUCINATORY BEHAVIOUR -** Verbal report or behaviour indicating perceptions which are not generated by external stimuli. These may occur in the auditory, visual, olfactory or somatic realms.

Basis for rating - Verbal report and physical manifestations during the course of interview as well as reports of behaviour by primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - One or two clearly formed but infrequent hallucinations, or else a number of vague abnormal perceptions which do not result in distortions of thinking or behaviour.
4 **Moderate** - Hallucinations occur frequently but not continuously, and the patient's thinking and behaviour are only affected to a minor extent.
5 **Moderate Severe** - Hallucinations occur frequently, may involve more than one sensory modality, and tend to distort thinking and/or disrupt behaviour. Patient may have a delusional interpretation of these experiences and respond to them emotionally and, on occasion, verbally as well.
6 **Severe** - Hallucinations are present almost continuously, causing major disruption of thinking and behaviour. Patient treats these as real perceptions, and functioning is impeded by frequent emotional and verbal responses to them.
7 **Extreme** - Patient is almost totally preoccupied with hallucinations, which virtually dominate thinking and behaviour. Hallucinations are provided a rigid delusional interpretation and provoke verbal and behavioural responses, including obedience to command hallucinations.

P4. **EXCITEMENT -** Hyperactivity as reflected in accelerated motor behaviour, heightened responsivity to stimuli, hypervigilance or excessive mood lability.

Basis for rating - Behavioural manifestations during the course of interview as well as reports of behaviour by primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Tends to be slightly agitated, hypervigilant or mildly overaroused throughout the interview, but without distinct episodes of excitement or marked mood lability. Speech may be slightly pressured.
4 **Moderate** - Agitation or overarousal is clearly evident throughout the interview, affecting speech and general mobility, or episodic outbursts occur sporadically.
5 **Moderate Severe** - Significant hyperactivity or frequent outbursts of motor activity are observed, making it difficult for the patient to sit still for longer than several minutes at any given time.
6 **Severe** - Marked excitement dominates the interview, delimits attention, and to some extent affects personal functions such as eating or sleeping.
7 **Extreme** - marked excitement seriously interferes in eating and sleeping and makes interpersonal interactions virtually impossible. Acceleration of speech and motor activity may result in incoherence and exhaustion.

P5. **GRANDIOSITY -** Exaggerated self-opinion and unrealistic convictions of superiority, including delusions of extraordinary abilities, wealth, knowledge, fame, power and moral righteousness.

Basis for rating - Thought content expressed in the interview and its influence on behaviour.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Some expansiveness or boastfulness is evident, but without clear-cut grandiose delusions.
4 **Moderate** - Feels distinctly and unrealistically superior to others. Some poorly formed delusions about special status or abilities may be present but are not acted upon.
5 **Moderate Severe** - Clear-cut delusions concerning remarkable abilities, status or power are expressed and influence attitude but not behaviour.
6 **Severe** - Clear-cut delusions of remarkable superiority involving more than one parameter (wealth, knowledge, fame, etc) are expressed, notably influence interactions and may be acted upon.
7 **Extreme** - Thinking, interactions and behaviour are dominated by multiple delusions of amazing ability, wealth, knowledge, fame, power and/or moral stature, which may take on a bizarre quality.

P6. **SUSPICIOUSNESS/PERSECUTION -** Unrealistic or exaggerated ideas of persecution, as reflected in guardedness, ad distrustful attitude, suspicious hypervigilance or frank delusions that others mean harm.

Basis for rating – Thought content expressed in the interview and its influence on behaviour.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Presents a guarded or even openly distrustful attitude, but thoughts, interactions and behaviour are minimally affected.
4 **Moderate** - Distrustfulness is clearly evident and intrudes on the interview and/or behaviour, but there is no evidence of persecutory delusions. Alternatively, there may be indication of loosely formed persecutory delusions, but these do not seem to affect the patient's attitude or interpersonal relations.
5 **Moderate Severe** - Patient shows marked distrustfulness, leading to major disruption of interpersonal relations, or else there are clear-cut persecutory delusions that have limited impact on interpersonal relations and behaviour.
6 **Severe** - Clear-cut pervasive delusions of persecution which may be systematised and significantly interfere in interpersonal relations.
7 **Extreme** - A network of systematised persecutory delusions dominates the patient's thinking, social relations and behaviour.

P7. **HOSTILITY -** Verbal and nonverbal expressions of anger and resentment, including sarcasm, passive-aggressive behaviour, verbal abuse and assualtiveness.

Basis for rating – Interpersonal behaviour observed during the interview and reports by primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Indirect or restrained communication of anger, such as sarcasm, disrespect, hostile expressions and occasional irritability.
4 **Moderate** - Presents an overtly hostile attitude, showing frequent irritability and direct expression of anger or resentment.
5 **Moderate Severe** - Patient is highly irritable and occasionally verbally abusive or threatening.
6 **Severe** - Uncooperativeness and verbal abuse or threats notably influence the interview and seriously impact upon social relations. Patient may be violent and destructive but is not physically assualtive towards others.
7 **Extreme** - Marked anger results in extreme uncooperativeness, precluding other interactions, or in episode(s) of physical assault towards others.

NEGATIVE SCALE (N)

N1. **BLUNTED AFFECT -** Diminished emotional responsiveness as characterised by a reduction in facial expression, modulation of feelings and communicative gestures.

Basis for rating - Observation of physical manifestations of affective tone and emotional responsiveness during the course of the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Changes in facial expression and communicative gestures seem to be stilted, forced, artificial or lacking in modulation.
4 **Moderate** - Reduced range of facial expression and few expressive gestures result in a dull appearance
5 **Moderate Severe** - Affect is generally 'flat' with only occasional changes in facial expression and a paucity of communicative gestures.
6 **Severe** - Marked flatness and deficiency of emotions exhibited most of the time. There may be unmodulated extreme affective discharges, such as excitement, rage or inappropriate uncontrolled laughter.
7 **Extreme** – Changes in facial expression and evidence of communicative gestures are virtually absent. Patient seems constantly to show a barren or 'wooden' expression.

N2. **EMOTIONAL WITHDRAWAL -** Lack of interest in, involvement with, and affective commitment to life's events.

Basis for rating - Reports of functioning from primary care workers or family and observation of interpersonal behaviour during the course of the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Usually lack initiative and occasionally may show deficient interest in surrounding events.
4 **Moderate** - Patient is generally distanced emotionally from the milieu and its challenges but, with encouragement, can be engaged.
5 **Moderate Severe** - Patient is clearly detached emotionally from persons and events in the milieu, resisting all efforts at engagement. Patient appears distant, docile and purposeless but can be involved in communication at least briefly and tends to personal needs, sometimes with assistance.
6 **Severe** - Marked deficiency of interest and emotional commitment results in limited conversation with others and frequent neglect of personal functions, for which the patient requires supervision.
7 **Extreme** – Patient is almost totally withdrawn, uncommunicative and neglectful of personal needs as a result of profound lack of interest and emotional commitment.

N3. **POOR RAPPORT** - Lack of interpersonal empathy, openness in conversation and sense of closeness, interest or involvement with the interviewer. This is evidenced by interpersonal distancing and reduced verbal and nonverbal communication.

Basis for rating - Interpersonal behaviour during the course of the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Conversation is characterised by a stilted, strained or artificial tone. It may lack emotional depth or tend to remain on an impersonal, intellectual plane.
4 **Moderate** - Patient typically is aloof, with interpersonal distance quite evident. Patient may answer questions mechanically, act bored, or express disinterest.
5 **Moderate Severe** - Disinvolvement is obvious and clearly impedes the productivity of the interview. Patient may tend to avoid eye or face contact.
6 **Severe** - Patient is highly indifferent, with marked interpersonal distance. Answers are perfunctory, and there is little nonverbal evidence of involvement. Eye and face contact are frequently avoided.
7 **Extreme** - Patient is totally uninvolved with the interviewer. Patient appears to be completely indifferent and consistently avoids verbal and nonverbal interactions during the interview.

N4. **PASSIVE/APATHETIC SOCIAL WITHDRAWAL** - Diminished interest and initiative in social interactions due to passivity, apathy, anergy or avolition. This leads to reduced interpersonal involvements and neglect of activities of daily living.

Basis for rating – Reports on social behaviour from primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Shows occasional interest in social activities but poor initiative. Usually engages with others only when approached first by them.
4 **Moderate** – Passively goes along with most social activities but in a disinterested or mechanical way. Tends to recede into the background.
5 **Moderate Severe** - Passively participates in only a minority of activities and shows virtually no interest or initiative. Generally spends little time with others.
6 **Severe** - Tends to be apathetic and isolated, participating very rarely in social activities and occasionally neglecting personal needs. Has very few spontaneous social contacts.
7 **Extreme** – Profoundly apathetic, socially isolated and personally neglectful.

N5. **DIFFICULTY IN ABSTRACT THINKING** - Impairment in the use of the abstract-symbolic mode of thinking, as evidenced by difficulty in classification, forming generalisations and proceeding beyond concrete or egocentric thinking in problem-solving tasks.

Basis for rating - Responses to questions on similarities and proverb interpretation, and use of concrete vs. abstract mode during the course of the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Tends to give literal or personalised interpretations to the more difficult proverbs and may have some problems with concepts that are fairly abstract or remotely related.
4 **Moderate** - Often utilises a concrete mode. Has difficulty with most proverbs and some categories. Tends to be distracted by functional aspects and salient features.
5 **Moderate Severe** - Deals primarily in a concrete mode, exhibiting difficulty with most proverbs and many categories.
6 **Severe** - Unable to grasp the abstract meaning of any proverbs or figurative expressions and can formulate classifications for only the most simple of similarities. Thinking is either vacuous or locked into functional aspects, salient features and idiosyncratic interpretations.
7 **Extreme** - Can use only concrete modes of thinking. Shows no comprehension of proverbs, common metaphors or similes, and simple categories. Even salient and functional attributes do not serve as a basis for classification. This rating may apply to those who cannot interact even minimally with the examiner due to marked cognitive impairment.

N6. **LACK OF SPONTANEITY AND FLOW OF CONVERSATION -** Reduction in the normal flow of communication associated with apathy, avolition, defensiveness or cognitive deficit. This is manifested by diminished fluidity and productivity of the verbal interactional process.

Basis for rating - Cognitive-verbal processes observed during the course of interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** – Conversation shows little initiative. Patient's answers tend to be brief and unembellished, requiring direct and leading questions by the interviewer.
4 **Moderate** – Conversation lacks free flow and appears uneven or halting. Leading questions are frequently needed to elicit adequate responses and proceed with conversation.
5 **Moderate Severe** - Patient shows a marked lack of spontaneity and openness, replying to the interviewer's questions with only one or two brief sentences.
6 **Severe** - Patient's responses are limited mainly to a few words or short phrases intended to avoid or curtail communication. (e.g. "I don't know", "I'm not at liberty to say"). Conversation is seriously impaired as a result and the interview is highly unproductive.
7 **Extreme** - Verbal output is restricted to, at most, an occasional utterance, making conversation not possible.

N7. **STEREOTYPED THINKING -** Decreased fluidity, spontaneity and flexibility of thinking, as evidenced in rigid, repetitious or barren thought content.

Basis for rating - Cognitive-verbal processes observed during the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Some rigidity shown in attitude or beliefs. Patient may refuse to consider alternative positions or have difficulty in shifting from one idea to another.
4 **Moderate** - Conversation revolves around a recurrent theme, resulting in difficulty in shifting to a new topic.
5 **Moderate Severe** - Thinking is rigid and repetitious to the point that, despite the interviewer's efforts, conversation is limited to only two or three dominating topics.
6 **Severe** – Uncontrolled repetition of demands, statements, ideas or questions which severely impairs conversation.
7 **Extreme** - Thinking, behaviour and conversation are dominated by constant repetition of fixed ideas or limited phrases, leading to gross rigidity, inappropriateness and restrictiveness of patient's communication.

GENERAL PSYCHOPATHOLOGY SCALE (G)

G1. **SOMATIC CONCERN -** Physical complaints or beliefs about bodily illness or malfunctions. This may range from a vague sense of ill being to clear-cut delusions of catastrophic physical disease.

Basis for rating - Thought content expressed in the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Distinctly concerned about health or bodily malfunction, but there is no delusional conviction and overconcern can be allayed by reassurance.
4 **Moderate** - Complains about poor health or bodily malfunction, but there is no delusional conviction, and overconcern can be allayed by reassurance.
5 **Moderate Severe** - Patient expresses numerous or frequent complaints about physical illness or bodily malfunction, or else patient reveals one or two clear-cut delusions involving these themes but is not preoccupied by them.
6 **Severe** - Patient is preoccupied by one or a few clear-cut delusions about physical disease or organic malfunction, but affect is not fully immersed in these themes, and thoughts can be diverted by the interviewer with some effort.
7 **Extreme** – Numerous and frequently reported somatic delusions, or only a few somatic delusions of a catastrophic nature, which totally dominate the patient's affect or thinking.

G2. **ANXIETY** - Subjective experience of nervousness, worry, apprehension or restlessness, ranging from excessive concern about the present or future to feelings of panic.

Basis for rating - Verbal report during the course of interview and corresponding physical manifestations.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Expresses some worry, overconcern or subjective restlessness, but no somatic and behavioural consequences are reported or evidenced.
4 **Moderate** - Patient reports distinct symptoms of nervousness, which are reflected in mild physical manifestations such as fine hand tremor and excessive perspiration.
5 **Moderate Severe** - Patient reports serious problems of anxiety which have significant physical and behavioural consequences, such as marked tension, poor concentration, palpitations or impaired sleep.
6 **Severe** - Subjective state of almost constant fear associated with phobias, marked restlessness or numerous somatic manifestations.
7 **Extreme** - Patient's life is seriously disrupted by anxiety, which is present almost constantly and at times reaches panic proportion or is manifested in actual panic attacks.

G3. **GUILT FEELINGS** - Sense of remorse or self-blame for real or imagined misdeeds in the past.

Basis for rating - Verbal report of guilt feelings during the course of interview and the influence on attitudes and thoughts.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild –** Questioning elicits a vague sense of guilt or self-blame for a minor incident, but the patient clearly is not overly concerned.
4 **Moderate** - Patient expresses distinct concern over his responsibility for a real incident in his life but is not pre-occupied with it and attitude and behaviour are essentially unaffected.
5 **Moderate Severe** - Patient expresses a strong sense of guilt associated with self-deprecation or the belief that he deserves punishment. The guilt feelings may have a delusional basis, may be volunteered spontaneously, may be a source of preoccupation and/or depressed mood, and cannot be allayed readily by the interviewer.
6 **Severe** - Strong ideas of guilt take on a delusional quality and lead to an attitude of hopelessness or worthlessness. The patient believes he should receive harsh sanctions as such punishment.
7 **Extreme** - Patient's life is dominated by unshakable delusions of guilt, for which he feels deserving of drastic punishment, such as life imprisonment, torture, or death. There may be associated suicidal thoughts or attribution of others' problems to one's own past misdeeds.

G4. **TENSION -**Overt physical manifestations of fear, anxiety, and agitation, such as stiffness, tremor, profuse sweating and restlessness.

Basis for rating - Verbal report attesting to anxiety and thereupon the severity of physical manifestations of tension observed during the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Posture and movements indicate slight apprehensiveness, such as minor rigidity, occasional restlessness, shifting of position, or fine rapid hand tremor.
4 **Moderate** - A clearly nervous appearance emerges from various manifestations, such as fidgety behaviour, obvious hand tremor, excessive perspiration, or nervous mannerisms.
5 **Moderate Severe** - Pronounced tension is evidenced by numerous manifestations, such as nervous shaking, profuse sweating and restlessness, but can conduct in the interview is not significantly affected.
6 **Severe** - Pronounced tension to the point that interpersonal interactions are disrupted. The patient, for example, may be constantly fidgeting, unable to sit still for long, or show hyperventilation.
7 **Extreme** - Marked tension is manifested by signs of panic or gross motor acceleration, such as rapid restless pacing and inability to remain seated for longer than a minute, which makes sustained conversation not possible.

G5. **MANNERISMS AND POSTURING –** Unnatural movements or posture as characterised be an awkward, stilted, disorganised, or bizarre appearance.

Basis for rating - Observation of physical manifestations during the course of interview as well as reports from primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Slight awkwardness in movements or minor rigidity of posture
4 **Moderate** – Movements are notably awkward or disjointed, or an unnatural posture is maintained for brief periods.
5 **Moderate Severe** - Occasional bizarre rituals or contorted posture are observed, or an abnormal position is sustained for extended periods.
6 **Severe** - Frequent repetition of bizarre rituals, mannerisms or stereotyped movements, or a contorted posture is sustained for extended periods.
7 **Extreme** - Functioning is seriously impaired by virtually constant involvement in ritualistic, manneristic, or stereotyped movements or by an unnatural fixed posture which is sustained most of the time.

G6. **DEPRESSION** - Feelings of sadness, discouragement, helplessness and pessimism.

Basis for rating - Verbal report of depressed mood during the course of interview and its observed influence on attitude and behaviour.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Expresses some sadness of discouragement only on questioning, but there is no evidence of depression in general attitude or demeanor.
4 **Moderate** - Distinct feelings of sadness or hopelessness, which may be spontaneously divulged, but depressed mood has no major impact on behaviour or social functioning and the patient usually can be cheered up.
5 **Moderate Severe** - Distinctly depressed mood is associated with obvious sadness, pessimism, loss of social interest, psychomotor retardation and some interference in appetite and sleep. The patient cannot be easily cheered up.
6 **Severe** - Markedly depressed mood is associated with sustained feelings of misery, occasional crying, hopelessness and worthlessness. In addition, there is major interference in appetite and or sleep as well as in normal motor and social functions, with possible signs of self-neglect.
7 **Extreme** - Depressive feelings seriously interfere in most major functions. The manifestations include frequent crying, pronounced somatic symptoms, impaired concentration, psychomotor retardation, social disinterest, self neglect, possible depressive or nihilistic delusions and/or possible suicidal thoughts or action.

G7. **MOTOR RETARDATION –** Reduction in motor activity as reflected in slowing or lessening or movements and speech, diminished responsiveness of stimuli, and reduced body tone.

Basis for rating - Manifestations during the course of interview as well as reports by primary care workers as well as family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Slight but noticeable diminution in rate of movements and speech. Patient may be somewhat underproductive in conversation and gestures.
4 **Moderate** - Patient is clearly slow in movements, and speech may be characterised by poor productivity including long response latency, extended pauses or slow pace.
5 **Moderate Severe** – A marked reduction in motor activity renders communication highly unproductive or delimits functioning in social and occupational situations. Patient can usually be found sitting or lying down.
6 **Severe** - Movements are extremely slow, resulting in a minimum of activity and speech. Essentially the day is spent sitting idly or lying down.
7 **Extreme** - Patient is almost completely immobile and virtually unresponsive to external stimuli.

G8. **UNCOOPERATIVENESS** - Active refusal to comply with the will of significant others, including the interviewer, hospital staff or family, which may be associated with distrust, defensiveness, stubbornness, negativism, rejection of authority, hostility or belligerence.

Basis for rating - Interpersonal behaviour observed during the course of the interview as well as reports by primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Complies with an attitude of resentment, impatience, or sarcasm. May inoffensively object to sensitive probing during the interview.
4 **Moderate** - Occasional outright refusal to comply with normal social demands, such as making own bed, attending scheduled programmes, etc. The patient may project a hostile, defensive or negative attitude but usually can be worked with.
5 **Moderate Severe** - Patient frequently is incompliant with the demands of his milieu and may be characterised by other as an "outcast" or having "a serious attitude problem". Uncooperativeness is reflected in obvious defensiveness or irritability with the interviewer and possible unwillingness to address many questions.
6 **Severe** - Patient is highly uncooperative, negativistic and possibly also belligerent. Refuses to comply with the most social demands and may be unwilling to initiate or conclude the full interview.
7 **Extreme** - Active resistance seriously impact on virtually all major areas of functioning. Patient may refuse to join in any social activities, tend to personal hygiene, converse with family or staff and participate even briefly in an interview.

G9. **UNUSUAL THOUGHT CONTENT** - Thinking characterised by strange, fantastic or bizarre ideas, ranging from those which are remote or atypical to those which are distorted, illogical and patently absurd.

Basis for rating - Thought content expressed during the course of interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Thought content is somewhat peculiar, or idiosyncratic, or familiar ideas are framed in an odd context.
4 **Moderate** - Ideas are frequently distorted and occasionally seem quite bizarre.
5 **Moderate Severe** - Patient expresses many strange and fantastic thoughts, (e.g. Being the adopted son of a king, being an escapee from death row), or some which are patently absurd (e.g. Having hundreds of children, receiving radio messages from outer space from a tooth filling).
6 **Severe** - Patient expresses many illogical or absurd ideas or some which have a distinctly bizarre quality (e.g. having three heads, being a visitor from another planet).
7 **Extreme** - Thinking is replete with absurd, bizarre and grotesque ideas.

G10. **DISORIENTATION** - Lack of awareness of one's relationship to the milieu, including persons, place and time, which may be due to confusion or withdrawal.

Basis for rating - Responses to interview questions on orientation.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - General orientation is adequate but there is some difficulty with specifics. For example, patient knows his location but not the street address, knows hospital staff names but not their functions, knows the month but confuses the day of the week with an adjacent day, or errs in the date by more than two days. There may be narrowing of interest evidenced by familiarity with the immediate but not extended milieu, such as ability to identify staff but not the mayor, governor, or president.
4 **Moderate** - Only partial success in recognising persons, places and time. For example, patient knows he is in a hospital but not its name, knows the name of the city but not the borough or district, knows the name of his primary therapist but not many other direct care workers, knows the year or season but not sure of the month.
5 **Moderate Severe** - Considerable failure in recognising persons, place and time. Patient has only a vague notion of where he is and seems unfamiliar with most people in his milieu. He may identify the year correctly or nearly but not know the current month, day of week or even the season.
6 **Severe** - Marked failure in recognising persons, place and time. For example, patient has no knowledge of his whereabouts, confuses the date by more than one year, can name only one or two individuals in his current life.
7 **Extreme** - Patient appears completely disorientated with regard to persons, place and time. There is gross confusion or total ignorance about one's location, the current year and even the most familiar people, such as parents, spouse, friends and primary therapist.

G11. **POOR ATTENTION** - Failure in focused alertness manifested by poor concentration, distractibility from internal and external stimuli, and difficulty in harnessing, sustaining or shifting focus to new stimuli.

Basis for rating – Manifestations during the course of interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Limited concentration evidenced by occasional vulnerability to distraction and faltering attention toward the end of the interview.
4 **Moderate** - Conversation is affected by the tendency to be easily distracted, difficulty in long sustaining concentration on a given topic, or problems in shifting attention to new topics.
5 **Moderate Severe** - Conversation is seriously hampered by poor concentration, distractibility, and difficulty in shifting focus appropriately..
6 **Severe** - Patient's attention can be harnessed for only brief moments or with great effort, due to marked distraction by internal or external stimuli.
7 **Extreme** - Attention is so disrupted that even brief conversation is not possible.

G12. **LACK OF JUDGEMENT AND INSIGHT** - Impaired awareness or understanding of one's own psychiatric condition and life situation. This is evidenced by failure to recognise past or present psychiatric illness or symptoms, denial of need for psychiatric hospitalisation or treatment, decisions characterised by poor anticipation or consequences, and unrealistic short-term and long-range planning.

Basis for rating – Thought content expressed during the interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Recognises having a psychiatric disorder but clearly underestimates its seriousness, the implications for treatment, or the importance of taking measures to avoid relapse. Future planning may be poorly conceived.
4 **Moderate** - Patient shows only a vague or shallow recognition of illness. There may be fluctuations in acknowledgement of being ill or little awareness of major symptoms which are present, such as delusions, disorganised thinking, suspiciousness and social withdrawal. The patient may rationalise the need for treatment in terms of its relieving lesser symptoms, such as anxiety, tension and sleep difficulty.
5 **Moderate Severe** - Acknowledges past but not present psychiatric disorder. If challenged, the patient may concede the presence of some unrelated or insignificant symptoms, which tend to be explained away by gross misinterpretation or delusional thinking. The need for psychiatric treatment similarly goes unrecognised.
6 **Severe** - Patient denies ever having had a psychiatric disorder. He disavows the presence of any psychiatric symptoms in the past or present and, though compliant, denies the need for treatment and hospitalisation.
7 **Extreme** - Emphatic denial of past and present psychiatric illness. Current hospitalisation and treatment are given a delusional interpretation (e.g. as punishment fro misdeeds, as persecution by tormentors, etc), and the patient thus refuse to cooperate with therapists, medication or other aspects of treatment.

G13. **DISTURBANCE OF VOLITION** – Disturbance in the wilful initiation, sustenance and control of one's thoughts, behaviour, movements and speech.

Basis for rating - Thought content and behaviour manifested in the course of interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - There is evidence of some indecisiveness in conversation and thinking, which may impede verbal and cognitive processes to a minor extent.
4 **Moderate** - Patient is often ambivalent and shows clear difficulty in reaching decisions. Conversation may be marred by alteration in thinking, and in consequence, verbal and cognitive functioning are clearly impaired.
5 **Moderate Severe** - Disturbance of volition interferes in thinking as well as behaviour. Patient shows pronounced indecision that impedes the initiation and continuation of social and motor activities, and which also may be evidence in halting speech.
6 **Severe** - Disturbance of volition interferes in the execution of simple automatic motor functions, such as dressing or grooming, and markedly affects speech.
7 **Extreme** – Almost complete failure of volition is manifested by gross inhibition of movement and speech resulting in immobility and/or mutism.

G14. **POOR IMPULSE CONTROL** - Disordered regulation and control of action on inner urges, resulting in sudden, unmodulated, arbitrary or misdirected discharge of tension and emotions without concern about consequences.

Basis for rating – Behaviour during the course of interview and reported by primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Patient tends to be easily angered and frustrated when facing stress or denied gratification but rarely acts on impulse.
4 **Moderate** - Patient gets angered and verbally abusive with minimal provocation. May be occasionally threatening, destructive, or have one or two episodes involving physical confrontation or a minor brawl.
5 **Moderate Severe** - Patient exhibits repeated impulsive episodes involving verbal abuse, destruction of property, or physical threats. There may be one or two episodes involving serious assault, for which the patient requires isolation, physical restraint, or p.r.n. sedation.
6 **Severe** - Patient frequently is impulsive aggressive, threatening, demanding, and destructive, without any apparent consideration of consequences. Shows assualtive behaviour and may also be sexually offensive and possibly respond behaviourally to hallucinatory commands.
7 **Extreme** - Patient exhibits homicidal, sexual assaults, repeated brutality, or self-destructive behaviour. Requires constant direct supervision or external constraints because of inability to control dangerous impulses.

G15. **PREOCCUPATION** - Absorption with internally generated thoughts and feelings and with autistic experiences to the detriment of reality orientation and adaptive behaviour.

Basis for rating - Interpersonal behaviour observed during the course of interview.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Excessive involvement with personal needs or problems, such that conversation veers back to egocentric themes and there is diminished concerned exhibited toward others.
4 **Moderate** - Patient occasionally appears self-absorbed, as if daydreaming or involved with internal experiences, which interferes with communication to a minor extent.
5 **Moderate Severe** - Patient often appears to be engaged in autistic experiences, as evidenced by behaviours that significantly intrude on social and communicational functions, such as the presence of a vacant stare, muttering or talking to oneself, or involvement with stereotyped motor patterns.
6 **Severe** - Marked preoccupation with autistic experiences, which seriously delimits concentration, ability to converse, and orientation to the milieu. The patient frequently may be observed smiling, laughing, muttering, talking, or shouting to himself.
7 **Extreme** - Gross absorption with autistic experiences, which profoundly affects all major realms of behaviour. The patient constantly may be responding verbally or behaviourally to hallucinations and show little awareness of other people or the external milieu.

G16. **ACTIVE SOCIAL AVOIDANCE** - Diminished social involvement associated with unwarranted fear, hostility, or distrust.

Basis for rating - Reports of social functioning primary care workers or family.

1 **Absent** - Definition does not apply
2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits
3 **Mild** - Patient seems ill at ease in the presence of others of others and prefers to spend time alone, although he participates in social functions when required.
4 **Moderate** - Patient begrudgingly attends all or most social activities but may needs to be persuaded or may terminate prematurely on account of anxiety, suspiciousness, or hostility.
5 **Moderate Severe** - Patient fearfully or angrily keeps away from many social interactions despite others' efforts to engage him. Tends to spend unstructured time alone.
6 **Severe** - Patient participates in very few social activities because of fear, hostility, or distrust. When approached, the patient shows a strong tendency to break off interactions, and generally he tends to isolate himself from others.
7 **Extreme** - Patient cannot be engaged in social activities because of pronounced fears, hostility, or persecutory delusions. To the extent possible, he avoids all interactions and remains isolated from others.

Global Assessment of Functioning (GAF) Scale

(From DSM-IV-TR, p. 34.)

Consider psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness. Do not include impairment in functioning due to physical (or environmental) limitations.

Code	(Note: Use intermediate codes when appropriate, e.g., 45, 68, 72.)
100 | 91	**Superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities. No symptoms.**
90 | 81	**Absent or minimal symptoms** (e.g., mild anxiety before an exam**), good functioning in all areas, interested and involved in a wide range of activities. socially effective, generally satisfied with life, no more than everyday problems or concerns** (e.g. an occasional argument with family members).
80 | 71	**If symptoms are present, they are transient and expectable reactions to psychosocial stressors** (e.g., difficulty concentrating after family argument); **no more than slight impairment in social, occupational or school functioning** (e.g., temporarily failing behind in schoolwork).
70 | 61	**Some mild symptoms** (e.g. depressed mood and mild insomnia) **OR some difficulty in social, occupational, or school functioning** (e.g., occasional truancy, or theft within the household)**, but generally functioning pretty well, has some meaningful interpersonal relationships.**
60 | 51	**Moderate symptoms** (e.g., flat affect and circumstantial speech, occasional panic attacks) **OR moderate difficulty in social, occupational, or school functioning** (e.g.. few friends, conflicts with peers or co-workers).
50 | 41	**Serious symptoms** (e.g.. suicidal ideation, severe obsessional rituals, frequent shoplifting) **OR any serious impairment in social, occupational, or school functioning** (e.g., no friends, unable to keep a job).
40 | 31	**Some impairment in reality testing or communication** (e.g., speech is at times illogical, obscure, or irrelevant) **OR major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood** (e.g., depressed man avoids friends, neglects family, and is unable to work; child frequently beats up younger children, is defiant at home, and is failing at school).
30 | 21	**Behavior is considerably influenced by delusions or hallucinations** **OR serious impairment in communication or judgment** (e.g., sometimes incoherent, acts grossly inappropriately, suicidal preoccupation) **OR inability to function in almost all areas** (e.g., stays in bed all day; no job, home, or friends).
20 | 11	**Some danger of hurting self or others** (e.g., suicide attempts without clear expectation of death; frequently violent; manic excitement) **OR occasionally fails to maintain minimal personal hygiene** (e.g., smears feces) **OR gross impairment in communication** (e.g., largely incoherent or mute).
10 | 1	**Persistent danger of severely hurting self or others** (e.g., recurrent violence) **OR persistent inability to maintain minimal personal hygiene** **OR serious suicidal act with clear expectation of death.**
0	Inadequate information.

Appendix A. Instrument for the evaluation of "Functional Remission in General Schizophrenia" (FROGS) (*guidelines available on request*)

I - Daily life (DL) (5 criteria)

***Personal care and appearance*:** personal presentation, personal hygiene and standard of clothing appropriate to his former life and to sociocultural standards

☐1 ☐2 ☐3 ☐4 ☐5

***Diet*:** ability to ensure proper meals (stocking of food, organization) and/or to observe daily rhythms of his family or of his place of abode

☐1 ☐2 ☐3 ☐4 ☐5

***Housekeeping*:** upkeep of place of abode (housework), washing up, laundry, cleanliness, emptying the bins) tidying up, state of the place of abode

☐1 ☐2 ☐3 ☐4 ☐5

***Administrative and financial management*:** organization of daily expenses, payment of bills, replying to letters, approaching organizations, knowledge of his rights, management of his possessions

☐1 ☐2 ☐3 ☐4 ☐5

***Travel and communication*:** modes of transport, journeys, use of usual information and communication resources

☐1 ☐2 ☐3 ☐4 ☐5

II - Activities (AC) (3 criteria)

***Personal activities*:** participation in activities (sports, reading, hobbies, manual activities, animals for friendship), organization of spare time

☐1 ☐2 ☐3 ☐4 ☐5

***Social activities*:** participating in social and civil activities

☐1 ☐2 ☐3 ☐4 ☐5

***Studying or work*:** pursuing or picking up again school, work group or professional position, finding or picking up again a job, integration into working life

☐1 ☐2 ☐3 ☐4 ☐5

III - Relationships (R) (5 criteria)

***Family, friends*:** frequency and quality of meetings

☐1 ☐2 ☐3 ☐4 ☐5

***Love and sexual life*:** desire of the patient to enter (or not) into a relationship and pursue it to its natural conclusion; acceptable sexual behaviour which will be evaluated as far as technically possible

☐1 ☐2 ☐3 ☐4 ☐5

***Social network*:** (shopkeepers, neighbours etc.) relationships necessary to maintain harmonious inclusion in society (e.g. quality of relationship with neighbours)

☐1 ☐2 ☐3 ☐4 ☐5

***Absence of antisocial or violent behaviour*:** absence of law breaking, and/or serious or repeated violent behaviour

☐1 ☐2 ☐3 ☐4 ☐5

***Empathy and help for others*:** interest shown in others; initiatives for helping others

☐1 ☐2 ☐3 ☐4 ☐5

IV - Quality of adaption (QA) (3 criteria)

***Management of his illness and treatment*:** knowledge of his illness and what causes it, warning signs of a relapse and measures to circumvent them, compliance with treatment

☐1 ☐2 ☐3 ☐4 ☐5

***Adaptation to stress and unforeseen circumstances*:** good emotional control, recognition of stress factors and effective means of coping

☐1 ☐2 ☐3 ☐4 ☐5

***Self-esteem and sense of independence*:** Self awareness and individuality, dealing with critism from others

☐1 ☐2 ☐3 ☐4 ☐5

V - Health and treatments (HT) (3 criteria)

***Taking charge of personal health*:** attention to bodily indicators and hygiene measures relating to health (maintaining good health, dental hygiene, visits to the monitoring doctor, vaccinations) cutting down or giving up alcohol, smoking and/or illegal drugs

☐1 ☐2 ☐3 ☐4 ☐5

***Respect for biological rhythms*:** respecting biological rhythms (waking and sleeping), and the everyday rhythms of life (such as mealtimes, etc.)

☐1 ☐2 ☐3 ☐4 ☐5

***Functional impact of the secondary effects of treatment (effects on mood, and on cognitive, neurological, metabolic functions)*:** impact of the secondary effects of treatment on the quality of functional remission, and the possibility of stigmatization

☐1 ☐2 ☐3 ☐4 ☐5

1 : do not do - 2 : do partially - 3 - do a significant part - 4 : do almost all the activity - 5 : do perfectly

MASTER SHEET

Serial	Nan	Age	Sex	Address	Educ	Occupa	Marit	Relig	Lang	Income	SES	Type	Social	Onse	DO	DUI	Typica	Atyp	Dep	Dru	Hos	No	Last Admis	EC	Subs	Como	PANS	Pos	Nega	Gen.P		Core	Dep/A	GAF	CGI	FROG	Daiy	Pe	Die	Hou	AF	Trav	Activ	Per	Soc	Stu	Relat	Family	Love	Soci	Abs	Empa	Qlty.	Mg	Adpt.	Sel	Hea	Pers	Biolog	Sec.Effects of Trt
1		35	F	Moolakad	10	House	Se	Hind	Tami	5000	low	Joint	Good	30	5	2mth	_	Rispe	_	Goo	Yes	1	Aug-04	N	N	N	90	24	25	41		24	15	40	4	38	12	3	3	2	2	2	6	2	2	2	9	2	2	2	2	1	6	2	2	2	5	2	2	1
2		45	M	Manapakl	8	Carpen	Marri	Hind	Tami	6000	low	Joint	Good	30	15	6mth	Hpl,C	Ris	-	Poo	Yes	3	Apr-12	N	Y-Al	N	102	20	27	55		27	24	44	5	29	11	3	3	2	2	1	4	2	1	1	6	2	1	1	1	1	4	1	2	1	4	1	2	1
3		36	M	Kancheep	6	Compa	UnMa	Hind	Tami	5000	low	Joint	Good	24	12	1yr	Cpz	Ris/C	y	Poo	Yes	3	Nov-09	N	N	N	60	10	16	34		16	12	56	4	39	13	4	4	1	2	2	5	1	2	2	9	2	1	3	1	2	6	2	2	2	6	2	3	1
4		35	M	Vyasarpa	7	Painter	Marri	Hind	Tami	3000	low	Nucle	Poor	27	10	2yrs	Hpl	Ris	N	Poo	Yes	2	Dec-14	N	Y-Al	N	85	21	23	41		23	15	54	4	29	11	3	3	2	2	1	3	1	1	1	7	2	1	1	1	2	4	2	1	1	4	2	1	1
5		42	M	Veppanch	4	Farmer	Marri	Hind	Tami	4000	low	Joint	Good	36	6	1yr	-	Ris	N	Goo	Yes	1	Dec-11	N	N	N	41	12	10	21		13	10	66	3	53	17	4	4	4	4	3	9	3	3	3	10	2	2	2	2	2	9	3	3	3	6	2	3	1
6		45	F	Padappai	8	-	Divor	Hind	Tami	-	low	Joint	Poor	30	16	6mth	-	Ris	N	Goo	Yes	1	Dec-06	N	N	N	86	18	24	44		23	16	56	4	38	14	4	3	3	2	2	7	3	2	1	6	1	1	1	1	2	6	2	2	2	5	2	2	1
7		35	F	Perambur	5	House	Marri	Hind	Tami	5000	low	Nucle	Good	28	7	2mth	-	Olz	N	Goo	N	-			N	N	52	8	15	29		14	12	70	3	56	20	4	4	4	4	4	9	3	3	3	10	2	2	2	2	2	9	3	3	3	8	3	3	2
8		45	M	Guduvanc	3	-	UnMa	Hind	Tamil		low	Joint	Poor	30	15	3Yrs	Hpl,C	Ris	Y	Poo	Yes	3	Jan-15	N	Y-Sm	N	101	27	27	47		29	17	50	5	35	13	3	3	3	2	2	6	2	2	2	6	2	1	1	1	1	6	2	2	2	4	2	1	1
9		49	F	Kolathur	9	House	Marri	Hind	Tami	3000	low	Joint	Poor	29	20	3Yrs	Hpl,C	Ris	N	Poo	Yes	3	Nov-15	N	N	N	80	19	27	34		27	15	40	4	39	13	3	3	3	2	2	6	2	2	2	8	2	1	2	1	2	5	2	1	2	7	2	3	2
10		34	M	Ambattur	10	-	UnMa	Hind	Tami	-	low	Joint	Poor	22	12	2Yrs	Cpz	Ris,A	Y	Poo	Yes	3	Feb-12	N	Y-Sm	N	81	15	25	41		24	14	46	4	29	11	3	3	2	2	1	3	1	1	1	7	2	1	1	1	2	3	1	1	1	5	2	2	1
11		30	M	Pudukotta	M.Te	Compa	UnMa	Hind	Tami	20000	Mid	Joint	Good	25	5	15Da	-	Olz	N	Goo	N	-	-	N	N	N	39	7	10	22		9	10	90	2	69	22	5	5	4	4	4	12	4	4	4	14	3	3	3	2	3	11	4	4	3	10	4	3	3
12		48	F	Keezhkatt	B.A.	House	Marri	Hind	Tami	5000	low	Nucle	Good	35	13	3mth	Hpl	-	N	Goo	N	-	-	N	N	N	60	14	17	29		17	13	70	3	65	20	4	4	4	4	4	12	4	4	4	12	3	2	2	3	2	11	4	4	3	10	4	3	3
13		25	M	Pattabhira	10	Helper	UnMa	Hind	Tami	2000	low	Joint	Good	22	3	6mth	-	Ris	N	Poo	Yes	1	Oct-15	N	Y-Al	N	76	15	21	40		20	17	56	4	53	17	4	4	3	3	3	9	3	3	3	13	3	2	2	2	2	7	3	2	2	7	3	2	2
14		45	M	Chrompet	8	Painter	Marri	Chris	Tami	5000	low	Nucle	Poor	30	15	7	-	Olz	Y	Poo	N	-		N	Y-Al	N	89	24	23	37		29	12	40	5	36	13	3	3	3	2	2	6	2	2	2	6	1	1	1	1	2	6	2	2	2	5	2	2	1
15		30	M	Guindy	12	Attende	Marri	Hind	Tami	4000	low	Nucle	Good	25	5	15Da	Hpl,C	-	N	Goo	N	-		N	N	N	58	14	15	29		17	10	66	3	52	20	4	4	4	4	4	9	3	3	3	8	2	2	1	1	2	9	3	3	3	6	3	2	1
16		28	F	Arakkonai	10	House	UnMa	Hind	Tami	-	low	Joint	Good	23	5	1Mo	Hpl	-	N	Goo	Yes	1	Nov-14	N	N	N	43	10	14	19		11	8	60	3	52	19	4	4	4	4	3	7	3	2	2	12	2	2	2	3	3	6	3	2	1	8	3	3	2
17		44	M	Madipakk	8	Tailor	Marri	Hind	Tami	7000	low	Nucle	Good	35	12	1yr	-	Ris,A	N	Goo	N	-	-	N	N	N	59	13	15	31		15	12	68	3	46	18	4	3	4	4	3	9	3	3	3	7	2	1	1	1	2	6	2	2	2	6	3	2	1
18		42	M	Chidamba	12	Salesma	Marri	Hind	Tami	6000	low	Nucle	Good	34	8	1Mo	Hpl	-	N	N	N	-	-	N	N	N	60	9	17	34		15	14	60	4	56	20	4	4	4	4	4	10	4	3	3	9	3	2	2	1	1	9	3	3	3	8	3	3	2
19		34	M	M.K.B.Nag	7	-	UnMa	Hind	Tami	-	low	Joint	Poor	27	7	6mth	Hpl	Ris	N	Goo	N	-	-	N	N	N	85	21	25	39		27	17	56	4	44	15	4	4	3	2	2	7	3	2	2	7	2	1	1	1	2	7	3	2	2	5	2	2	1
20		40	M	Sharma N	10	Salesma	Marri	Mus	Tami	5000	low	Nucle	Good	30	10	1Mo	Hpl,C	Ris	N	Poo	Yes	2	Oct-14	N	Y-Al	N	68	20	19	29		19	13	58	4	48	15	3	3	3	3	3	9	3	3	3	9	3	2	2	1	1	7	3	2	2	8	3	3	2
21		38	F	Kovilampa	12	House	Marri	Chris	Tami	10000	Mid	Joint	Good	30	14	2mth	Hpl,C	-	N	Goo	N	-	-	N	N	N	71	9	18	44		15	21	66	3	53	15	4	4	4	4	3	9	3	3	3	10	3	2	2	2	1	10	4	3	3	7	3	2	2
22		29	F	Red Hills	10	House	Divor	Hind	Tami	4000	low	Joint	Good	30	10	15Da	-	Ris	N	Goo	N	-	-	N	N	N	43	11	13	19		14	8	68	2	60	20	4	4	4	4	4	10	3	4	3	15	3	3	3	3	3	7	3	2	2	8	3	3	2
23		48	F	Thiruvottr	10	House	Marri	Hind	Tami	6000	low	Nucle	Good	40	8	1mth	Hpl	-	N	Goo	Yes	1	Nov-08	N	N	Y-DM	56	10	13	33		13	13	80	3	64	23	5	5	5	4	4	10	4	4	2	13	4	2	2	2	3	10	4	4	2	8	3	3	2
24		27	F	Chengelpe	9	-	Divor	Hind	Tami	-	low	Joint	Poor	16	11	6mth	-	Ris	N	Poo	Yes	4	Jan-15	N	N	N	118	27	31	60		33	22	40	5	32	12	3	3	2	2	2	6	2	2	2	6	2	1	1	1	1	4	2	1	1	4	2	1	1
25		30	F	Cheyyar	7	Domest	Marri	Hind	Tami	3000	low	Nucle	Poor	20	10	1Yr	Hpl	Olz	Y	Poo	Yes	5	Nov-15	N	N	N	120	28	34	58		33	22	36	5	26	10	3	3	2	1	1	3	1	1	1	5	1	1	1	1	1	4	2	1	1	4	2	1	1
26		50	F	Karapakka	5	House	Marri	Hind	Tami	4000	low	Nucle	Poor	30	20	3Yrs	Hpl,C	Ris	Y	Poo	Yes	7	Aug-14	Y	Y-To	Y-DM	131	30	35	66		38	24	30	5	21	7	2	2	1	1	1	3	1	1	1	5	1	1	1	1	1	3	1	1	1	3	1	1	1
27		41	F	Gummidip	10	Coolie	Marri	Hind	Tami	6000	low	Joint	Good	27	14	2mth	Hpl,C	-	N	Goo	Yes	1	Oct-04	N	N	N	54	10	12	32		12	14	70	3	52	20	4	4	4	4	4	9	3	3	3	8	1	1	2	2	2	7	3	2	2	8	3	3	2
28		42	F	NSK Nagar	10	House	Marri	Hind	Tami	4000	low	Joint	Good	31	11	4mth	Hpl	Ris	N	Goo	N	-	-	N	N	N	61	10	15	36		19	13	64	3	61	20	4	5	5	3	3	10	4	3	3	15	3	3	3	3	3	9	3	3	3	7	3	2	2
29		42	M	Vannarap	6	Coolie	Marri	Hind	Tami	4000	low	Nucle	Good	30	16	2	Hpl	-	N	Poo	Yes	3	Oct-15	N	N	N	88	19	25	44		23	18	40	5	28	10	3	3	2	1	1	3	1	1	1	7	2	1	1	1	2	4	1	1	2	4	1	2	1
30		45	M	Vadapalar	12	Compa	Marri	Hind	Tami	5000	low	Joint	Good	35	13	1mth	Hpl	Ris	N	Goo	Yes	3	Nov-13	N	N	N	76	15	21	40		21	15	64	4	43	16	4	4	3	3	2	8	3	3	2	8	2	2	2	1	1	6	2	2	2	5	2	2	1
31		48	M	Waltax Ro	8	Auto Dr	Marri	Hind	Tami	6000	low	Nucle	Good	27	3	15Da	-	Olz	N	Goo	N	-	-	N	N	N	46	9	12	25		15	10	90	2	69	23	5	5	4	5	4	11	4	4	3	14	4	2	2	3	3	10	4	3	3	11	4	4	3
32		28	M	Saidapet	10	-	UnMa	Hind	Tami	-	low	Joint	Poor	18	11	2yrs	Hpl	Ris	N	Poo	Yes	4	Mar-15	N	Y-Al	N	107	30	27	50		30	21	40	6	31	12	3	3	2	2	2	5	2	2	1	6	2	1	1	1	1	4	2	1	1	4	2	1	1
33		46	F	Gummidip	DGNI	Staff Nu	Marri	Hind	Tami	25000	Mid	Nucle	Good	35	11	1mth	Hpl	Ris	N	Goo	Yes	2	Dec-10	N	N	N	63	12	12	39		15	19	70	3	61	22	5	5	4	4	4	11	4	4	3	11	3	2	2	2	2	10	4	3	3	7	3	2	2
34		42	F	Namakkal	8	-	Divor	Hind	Tami	-	low	Joint	Poor	25	17	1yr	Hpl,C	Ris,A	N	Goo	Yes	5	Sep-15	N	Y-To	Y-DM	86	11	21	54		19	21	34	6	29	11	3	3	2	2	1	3	1	1	1	6	2	1	1	1	1	5	2	2	1	4	2	1	1
35		33	F	Pudupet	9	-	Marri	Mus	Tami	5000	low	Nucle	Good	26	7	2yrs	Hpl,C	Ris	Y	Poo	Yes	3	Apr-14	N	N	N	124	28	32	64		31	24	40	5	29	11	3	3	2	2	1	3	1	1	1	7	2	1	2	1	1	4	2	1	1	4	2	1	1
36		40	M	Chrompet	10	-	Marri	Hind	Tami	-	low	Joint	Poor	25	15	2yrs	Hpl,C	Olz	N	Poo	Yes	3	Sep-15	N	Y-Al	N	104	14	33	57		28	20	52	5	32	11	3	3	2	2	1	4	2	1	1	8	2	1	1	2	2	5	2	2	1	4	2	1	1
37		40	M	Chenchi	B.Co	-	Marri	Hind	Tami	-	low	Joint	Good	25	15	3Yrs	Hpl,C	Olz	Y	Goo	Yes	4	Jan-14	N	N	N	111	15	33	63		30	24	34	5	27	8	2	2	2	1	1	4	2	1	1	6	2	1	1	1	1	5	1	2	2	4	2	1	1
38		28	F	T.Nagar	12	Compa	UnMa	Hind	Tami	3000	low	Joint	Good	22	6	3Wks	-	Olz	N	Goo	N	-	-	N	N	N	62	9	16	37		15	14	74	2	63	21	5	5	4	4	3	10	4	4	2	14	3	2	3	3	3	10	4	3	3	8	3	3	2
39		47	M	Mambalar	Dip.E	Electric	Marri	Hind	Tami	15000	Mid	Nucle	Good	30	17	6mth	Hpl	Olz	N	Goo	Yes	2	Nov-12	N	Y-Al	N	101	25	33	43		32	13	66	3	58	15	4	4	3	2	2	11	4	4	3	15	4	2	3	3	3	9	3	3	3	8	3	3	2
40		32	F	Egmore	5	-	Marri	Hind	Tami	3000	low	Nucle	Poor	26	6	4mth	Hpl,C	Ris	Y	Poo	Yes	3	Dec-12	Y	N	N	114	22	36	56		37	15	40	6	30	12	3	3	2	2	2	3	1	1	1	6	1	1	2	1	1	4	2	1	1	5	2	2	1
41		42	M	Thiruthan	7	-	Marri	Hind	Tami	2000	low	Nucle	Poor	28	14	2yrs	Hpl,C	Olz	Y	Poo	Yes	3	Nov-13	N	Y-Sm	N	92	21	23	48		22	19	50	4	29	10	3	3	2	1	1	5	2	2	1	6	2	1	1	1	1	4	2	1	1	4	2	1	1
42		41	M	Manapakl	10	-	UnMa	Hind	Tami	-	low	Joint	Poor	30	11	1yr	Hpl,C	Ris	N	Goo	Yes	2	Jan-15	N	Y-Al	N	87	10	31	46		24	13	56	3	42	15	4	4	3	2	2	7	3	2	2	9	3	2	2	1	1	6	2	2	2	5	2	2	1
43		40	F	Keezhkatt	5	House	Marri	Hind	Tami	5000	low	Nucle	Good	35	5	1mth	-	Ris	N	Goo	N	-	-	N	N	N	59	13	13	33		16	12	74	2	70	21	5	5	4	4	3	11	4	4	3	16	4	3	3	3	3	11	4	4	3	11	4	4	3
44		28	M	Padappai	B.Sc	Teache	Marri	Hind	Tami	27000	Mid	Nucle	Good	25	3	10da	-	Olz	N	Goo	N	-	-	N	N	N	51	10	12	29		14	12	90	1	79	22	5	5	4	4	4	14	5	5	4	20	5	3	4	4	4	12	4	4	4	11	4	4	3
45		25	F	Trichy	12	-	UnMa	Hind	Tami	-	low	Joint	Good	21	4	2mth	-	Ris,C	N	Poo	Yes	1	Jun-14	N	N	N	90	17	25	48		22	19	60	4	50	15	4	4	3	2	2	9	4	3	2	9	3	1	2	2	1	9	4	3	2	8	3	3	2
46		30	M	Teynampe	8	Farmer	Marri	Hind	Tami	6000	low	Nucle	Good	27	3	1mth	-	Ris	N	Goo	N	-	-	N	N	N	89	18	26	45		26	13	60	3	50	16	4	4	3	3	2	8	3	3	2	12	3	2	3	2	2	7	3	2	2	7	3	2	2
47		37	F	Velachery	B.A.	House	Marri	Hind	Tami	5000	low	Joint	Good	27	10	6mth	Hpl,C	Ris	y	Poo	Yes	2	May-13	N	N	N	78	16	21	41		21	15	62	3	50	16	4	4	4	2	2	8	4	2	2	12	3	2	3	2	2	8	3	3	2	6	3	2	1
48		43	F	Tambaran	10	House	Marri	Hind	Tami	4000	low	Joint	Good	35	8	1yr	Hpl	Ris	Y	Poo	Yes	2	Apr-14	N	Y-To	N	86	17	24	45		26	15	60	4	43	14	4	4	3	2	1	8	4	3	1	9	2	1	2	2	2	6	3	2	1	6	2	3	1
49		46	M	Vepery	8	Tailor	Marri	Hind	Tami	7000	low	Nucle	Good	30	16	3mth	-	Ris,A	N	Goo	N	-	-	N	Y-Al	N	77	12	20	45		17	17	66	3	49	15	4	4	3	2	2	9	3	3	3	11	3	2	2	2	2	7	3	2	2	7	3	3	1
50		43	M	Chetpet	Dip.N	Compa	Marri	Hind	Tami	15000	Mid	Nucle	Good	29	15	1mth	Hpl,C	-	N	Goo	Yes	1	Feb-02	N	Y-Al	Y-DM	45	7	12	26		12	11	88	1	77	22	5	5	4	4	4	13	5	4	4	19	4	3	4	4	4	12	4	4	4	11	4	4	3
51		38	M	Mandavel	12	Mechar	Marri	Hind	Tami	5000	low	Joint	Poor	20	18	2yrs	Hpl	Olz	Y	Poo	Yes	4	Dec-14	N	Y-Al	N	90	15	26	49		23	17	56	5	44	16	4	4	3	3	2	8	3	3	2	7	3	1	1	1	1	5	2	2	1	6	3	2	1
52		37	M	Chengelpe	12	Carpen	Marri	Hind	Tami	6000	low	Nucle	Good	35	2	15Da	-	Ris	N	Goo	N	-	-	N	N	N	52	10	16	26		15	11	90	1	78	23	5	5	4	5	4	13	5	4	4	19	5	3	3	4	4	12	4	4	4	11	4	4	3
53		45	F	Pondy	10	House	Marri	Hind	Tami	5000	low	Nucle	Poor	35	10	1yr	Hpl	Olz	N	Goo	Yes	3	Feb-15	N	N	N	115	17	38	60		28	19	40	6	25	7	2	2	1	1	1	4	2	1	1	5	1	1	1	1	1	4	2	1	1	5	2	2	1
54		32	F	Madipakk	10	-	UnMa	Hind	Tami	-	low	Joint	Good	18	14	1mth	Hpl	Ris	N	Goo	Yes	4	Apr-14	N	N	N	71	15	18	38		17	13	60	3	48	14	4	4	2	2	2	8	4	2	2	10	2	2	2	2	2	8	4	2	2	8	3	3	2
55		35	M	Mannady	B.Sc	Teache	Marri	Hind	Tami	20000	Mid	Nucle	Good	30	5	15Da	-	Olz	N	Goo	N	-	-	N	N	N	46	9	13	24		15	11	90	1	77	23	5	5	4	5	4	13	5	4	4	18	5	3	4	3	3	12	4	4	4	11	4	4	3
56		46	F	Kattupakk	12	-	UnMa	Hind	Tami	-	low	Joint	Poor	20	26	3Yrs	Hpl	Cloza	Y	Poo	Yes	6	Apr-15	N	N	N	97	16	28	53		26	13	40	4	30	11	3	3	2	2	1	4	2	1	1	6	2	1	1	1	1	4	2	1	1	5	2	2	1
57		32	M	Porur	8	Painter	Divor	Chris	Tami	3000	low	Joint	Poor	21	11	6mth	-	Olz	Y	Poo	Yes	3	Jan-15	N	Y-Al	N	94	12	33	49		27	14	40	5	26	7	2	2	1	1	1	4	2	1	1	6	2	1	1	1	1	4	2	1	1	5	2	2	1
58		28	F	Cuddalore	B.A.	Clerk	UnMa	Chris	Tami	15000	Mid	Joint	Good	26	2	15Da	-	Ris	N	Goo	N	-	-	N	N	N	41	7	11	23		11	9	90	1	83	23	5	5	4	5	4	13	5	4	4	21	5	4	4	4	4	13	5	4	4	13	5	4	4
59		40	F	Vandavas	12	Domest	Divor	Hind	Tami	4000	low	Joint	Poor	32	8	5M	-	Cloza	Y	Goo	Yes	2	Feb-15	N	N	N	84	20	25	39		26	18	60	4	46	16	4	4	3	3	2	7	2	2	3	9	3	1	2	2	1	7	3	2	2	7	3	3	1
60		25	F	Villupuran	8	House	Marri	Hind	Tami	6000	low	Nucle	Good	23	2	1M	-	Olz	N	Goo	N	-	-	N	N	N	61	15	11	35		16	16	70	3	62	19	5	5	5	2	2	10	5	3	2	15	4	2	3	3	3	8	4	2	2	10	4	4	2
61		36	M	Kallakuricl	7	-	Marri	Hind	Tami	-	low	Nucle	Poor	28	8	6mth	Hpl	-	Y	Goo	Yes	3	Apr-15	N	Y-Al	Y-DM	92	24	25	43		27	14	50	4	38	12	4	4	2	2	1	6	2	2	2	9	2	1	2	2	2	6	2	2	2	5	2	2	1
62		24	M	Pullianthc	10	-	UnMa	Hind	Tami	-	low	Joint	Good	20	4	2mth	-	Olz	N	Goo	Yes	1	Aug-14	N	N	N	67	13	19	35		19	13	88	2	58	19	5	4	3	4	3	10	4	3	3	14	4	1	4	3	2	8	3	3	2	7	3	2	2
63		19	M	Santhome	B.Co	Student	UnMa	Chris	Tami	-	Mid	Joint	Good	17	2	15Da	-	Olz	N	Goo	N	-	-	N	N	N	59	10	17	32		13	12	86	2	65	21	5	4	4	4	4	10	4	3	3	17	4	2	4	4	3	9	3	3	3	8	3	3	2
64		32	M	Perambur	5	Carpen	Marri	Hind	Tami	6000	low	Nucle	Good	28	4	1mth	-	Olz	N	Goo	Yes	1	May-13	N	Y-Sm	N	65	11	18	36		17	12	70	3	49	16	4	4	3	3	2	8	3	3	2	12	3	1	3	3	2	8	3	3	2	5	2	2	1
65		36	F	Mayiladut	8	House	Marri	Hind	Tami	4000	low	Nucle	Good	30	6	1yr	-	Ris	N	Goo	Yes	1	Jun-11	N	N	N	65	10	19	36		17	14	62	3	50	17	4	4	4	3	2	6	2	2	2	11	3	1	3	2	2	8	3	3	2	8	3	3	2
66		42	F	Tambaran	5	House	Marri	Hind	Tami	20000	Mid	Nucle	Good	32	10	1yr	Hpl	Ris	N	Goo	N	-	-	N	N	N	65	13	18	34		17	13	64	3	56	16	4	4	4	2	2	9	4	3	2	13	4	2	3	2	2	10	4	3	3	8	3	3	2
67		26	F	Thorappa	12	-	Divor	Hind	Tami	-	low	Joint	Poor	18	8	3mth	-	Ris	Y	Poo	Yes	4	Sep-15	N	N	N	80	13	22	45		21	14	52	5	42	14	4	4	2	2	2	7	3	2	2	8	2	1	2	2	1	7	3	2	2	6	3	2	1

68		42	M	Thiruvottr	12	-	Divor	Hind	Tami	-	low	Joint	Good	19	23	6mth	Hpl	Olz	Y	Poo	Yes	3	Nov-14	N	Y-Alc	N	91	16	25	50		24	19	50	5	37	12	3	3	2	2	2	7	3	2	2	8	2	1	2	2	1	5	2	2	1	5	2	2	1			
69		44	M	Tondiarpe	10	Watchm	Marri	Hind	Tami	4000	low	Nucle	Good	32	12	1yr	Hpl	Ris	N	Goo	Yes	1	May-11	N	Y-Alc	N	71	14	19	38		19	15	64	3	48	15	4	4	3	2	2	8	3	3	2	9	3	1	2	2	1	8	3	3	2	8	3	3	2			
70		46	F	Kancheep	9	House W	Marri	Hind	Tami	6000	low	Joint	Good	33	13	1yr	Hpl	Ris	N	Poo	Yes	3	Nov-08	N	N	N	73	15	18	40		19	16	50	3	49	16	4	4	4	2	2	6	2	2	2	10	3	1	2	2	2	9	3	3	3	8	3	3	2			
71		33	M	Puzhianth	6	-	Marri	Hind	Tami	2000	low	Nucle	Poor	25	8	2yrs	-	Olz	Y	Poo	Yes	4	Feb-15	N	Y-Alc	N	91	8	33	50		25	15	42	5	29	10	3	3	2	1	1	4	2	1	1	6	2	1	1	1	1	4	2	1	1	5	2	2	1			
72		31	M	Otteri	7	-	UnM	Hind	Tami	-	low	Joint	Good	28	3	1yr	-	Olz	N	Goo	N	-	-	N	Y-Alc	N	114	25	31	58		29	17	40	5	27	9	3	3	1	1	1	4	2	1	1	5	1	1	1	1	1	4	2	1	1	5	2	2	1			
73		32	F	Saidapet	-	House W	Marri	Hind	Tami	-	low	Nucle	Good	27	5	3mth	-	Ris	N	Goo	N	-	-	N	N	N	99	16	26	57		23	23	56	4	28	10	3	3	2	1	1	3	1	1	1	6	2	1	1	1	1	4	2	1	1	5	2	2	1			
74		50	M	Nungamb	8	Auto Dr	Marri	Hind	Tami	6000	low	Nucle	Good	30	20	1yr	Hpl	Olz	Y	Poo	Yes	5	Nov-14	N	Y-Alc	N	97	22	31	44		28	14	64	4	32	14	4	4	2	2	2	3	1	1	1	6	2	1	1	1	1	5	2	2	1	4	2	1	1			
75		35	F	Thiruvann	8	Export	Marri	Hind	Tami	4000	low	Nucle	Good	30	5	3mth	-	Ris	N	Goo	N	-	-	N	N	N	58	11	14	33		15	12	84	2	65	23	5	5	5	4	4	9	3	3	3	16	4	2	4	3	3	9	3	3	3	8	3	3	2			
76		37	F	Korrukkup	B.A.	House W	Marri	Hind	Tami	5000	low	Joint	Good	34	3	3Wks	-	Olz	N	Goo	N	N	N	N	N	N	60	11	17	32		16	11	82	2	59	18	4	4	4	3	3	8	3	3	2	15	4	2	3	3	3	10	4	3	3	8	3	3	2			
77		49	F	Mogappia	8	House W	Marri	Hind	Tami	4000	low	Joint	Poor	32	17	1yr	Hpl,C	N	Y	Poo	Yes	4	Jan-14	N	N	N	88	17	25	46		25	17	62	4	39	16	4	4	4	2	2	5	2	2	1	7	2	1	2	1	1	6	3	2	1	5	2	2	1			
78		40	F	Potheri	12	House W	Marri	Hind	Tami	5000	low	Nucle	Good	35	5	2mth	Hpl	N	N	Goo	N	N	N	N	N	Y-DM	83	18	24	41		24	19	64	3	49	18	4	4	4	3	3	7	3	2	2	11	3	1	3	2	2	8	3	3	2	5	2	2	1			
79		32	M	Thiruvottr	8	-	UnM	Hind	Tami	-	low	Joint	Poor	21	11	6mth	Hpl,C	N	Y	Poo	Yes	4	Mar-15	N	Y-Alc	N	97	18	31	48		29	18	44	6	30	9	3	3	1	1	1	4	2	1	1	7	2	1	2	1	1	5	2	2	1	5	2	2	1			
80		29	M	Vadapalar	B.Com	Accoun	Marri	Hind	Tami	15000	Mid	Nucle	Good	25	4	1mth	N	Olz	N	Goo	N	N	N	N	N	N	49	7	11	31		11	14	92	1	77	24	5	5	4	5	5	12	4	4	4	19	4	3	4	4	4	12	4	4	4	10	4	3	3			
81		32	F	Thiruthan	B.A.	House W	Marri	Hind	Tami	20000	Mid	Joint	Good	27	5	1mth	N	Ris	N	Goo	Yes	1	Dec-12	N	N	N	79	14	24	41		23	12	76	3	60	20	5	5	4	3	3	9	3	3	3	14	3	1	4	3	3	9	3	3	3	8	3	3	2			
82		40	F	Vellore	7	House W	Wido	Hind	Tami	2000	low	Joint	Poor	22	18	2yrs	Cpz	Ris	Y	Poo	Yes	4	Oct-14	N	N	N	80	15	25	40		23	12	56	5	35	13	4	4	2	2	1	4	2	1	1	8	2	1	2	2	1	5	2	2	1	5	2	2	1			
83		35	M	Arakkonar	10	Mason	Marri	Hind	Tami	5000	low	Nucle	Good	31	4	2mth	-	Ris	N	Goo	N	N	N	N	Y-Sm	N	69	8	23	38		16	13	86	2	56	20	5	5	3	4	3	8	3	3	2	12	3	1	3	3	2	8	3	3	2	8	3	3	2			
84		35	F	Pudukotta	B.Com	-	UnM	Chris	Tami	-	Mid	Joint	Good	15	16	6mth	Cpz	Cloza	N	Goo	Yes	2	Oct-13	N	N	N	96	9	32	55		23	18	56	4	32	12	4	4	2	1	1	4	2	1	1	5	1	1	1	1	1	6	2	2	2	5	2	2	1			
85		29	F	Cuddalore	10	House W	Marri	Chris	Tami	4000	low	Nucle	Poor	24	5	3mth	N	Olz	N	Goo	N	N	N	N	N	N	85	17	22	46		22	16	68	2	57	21	5	5	4	4	3	7	3	2	2	13	3	1	3	3	3	8	3	3	2	8	3	3	2			
86		45	M	Tuticorin	10	Busines	Marri	Hind	Tami	10000	Mid	Joint	Good	35	10	1yr	Hpl	Cloza	N	Poo	Yes	4	Nov-14	N	Y-Sm	N	81	18	20	43		24	13	62	4	40	14	4	4	2	2	2	6	2	2	2	8	2	1	2	2	1	6	2	2	2	6	3	2	1			
87		24	M	Anna Nag	12	Salesma	UnM	Hind	Tami	5000	low	Joint	Good	19	5	3Wks	N	Olz	N	Goo	Yes	3	Apr-15	N	N	N	67	13	18	36		19	13	76	2	39	12	4	4	2	1	1	5	2	2	1	11	3	1	3	2	2	6	2	2	2	5	2	2	1			
88		26	M	Porur	B.Sc	Compa	UnM	Hind	Tami	17000	Mid	Joint	Good	17	9	1yr	N	Ris	N	Goo	Yes	3	Dec-14		N	N	88	17	25	46		23	16	66	3	49	15	4	4	3	2	2	9	3	3	3	12	3	1	3	3	2	8	3	3	2	5	2	2	1			
89		31	M	Kancheep	8	Farmer	Marri	Hind	Tami	6000	low	Joint	Good	29	2	1mth	Hpl	N	N	Goo	N	N	N	N	N	N	75	11	23	41		21	15	90	1	57	22	5	5	4	4	4	8	2	3	3	14	3	2	3	3	3	7	3	2	2	6	2	3	1			
90		48	F	Chengelpe	GNM	Health	Marri	Chris	Tami	20000	Mid	Nucle	Good	35	13	6mth	Hpl	Arip	N	Poo	Yes	3	Nov-13	N	N	Y-DM	94	20	24	50		26	20	66	3	48	16	4	4	2	3	3	7	2	3	2	12	2	1	3	3	3	8	3	3	2	5	2	2	1			
91		38	M	Kurinchipa	12	Compa	Marri	Hind	Tami	7000	low	Nucle	Good	31	7	3mth	N	Ris	N	Goo	N	N	N	N	Y-Sm	N	64	11	20	33		18	12	80	2	58	19	5	4	3	4	3	10	4	3	3	14	3	2	3	3	3	7	3	3	2	8	3	3	2			
92		45	F	Shastri Na	M.Sc	SW Offi	UnM	Chris	Tami	50000	High	Joint	Good	25	20	6mth	Hpl,C	N	Y	Poo	Yes	4	Nov-13	N	N	N	68	11	19	38		20	10	80	3	56	18	4	3	3	4	4	11	4	4	3	15	4	1	3	3	4	7	2	3	2	5	1	3	1			
93		38	F	Ayanavara	DGNM	Nurse	UnM	Chris	Tami	20000	Mid	Single	Poor	25	13	2mth	Hpl	Cloza	Y	Poo	Yes	5	Jun-15	N	N	N	94	19	28	47		26	17	70	3	49	18	4	4	2	4	4	7	3	2	2	11	3	1	3	2	2	7	3	2	2	7	3	3	1			
94		28	M	Avadi	8	-	UnM	Hind	Tami	-	low	Joint	Poor	20	8	2yrs	N	Cloza	Y	Goo	Yes	3	Apr-15	N	Y-Sm	N	108	17	32	59		29	22	40	5	38	12	4	3	2	2	1	6	2	2	2	9	2	1	2	2	2	6	2	2	2	5	2	2	1			
95		22	M	Pudukotta	10	Cook	UnM	Mus	Tami	5000	low	Joint	Poor	18	4	2mth	Hpl	Olz	N	Poo	Yes	3	Jul-15	N	Y-Alc	N	78	15	23	40		20	15	70	3	49	17	4	4	4	3	2	7	3	2	2	11	3	1	3	2	2	7	3	2	2	7	3	2	2			
96		41	M	Guindy	8	Carpen	Marri	Chris	Tami	5000	low	Joint	Good	38	3	1mth	N	Olz,C	N	Goo	Yes	1	Feb-15	N	N	N	72	9	19	44		19	18	64	3	43	14	4	4	2	2	2	6	2	2	2	10	3	3	2	1	1	7	3	2	2	6	2	2	2			
97		35	F	Ambattur	12	House W	Marri	Hind	Tami	6000	low	Joint	Good	28	7	1We	N	Ris	N	Goo	Yes	2	Apr-15	N	N	N	59	10	16	33		15	12	50	4	38	13	3	3	3	2	2	6	2	2	2	8	2	1	1	2	2	6	2	2	2	5	2	2	1			
98		36	M	Kodambal	B.A.	Busines	Marri	Hind	Tami	10000	Mid	Joint	Good	31	5	6mth	Hpl	N	N	Goo	Y	2	Mar-15	N	Y-Alc	N	69	15	17	37		19	14	80	2	62	19	5	4	3	4	3	9	3	3	3	16	4	2	4	3	3	10	4	3	3	8	3	3	2			
99		42	F	Valsarava	M.Com	Bank	Marri	Hind	Tami	25000	High	Nucle	Good	35	7	2yrs	N	Olz	N	Goo	Y	1	Aug-14	N	N	N	74	15	18	41		19	19	70	3	57	19	5	4	4	3	3	9	3	3	3	13	3	1	3	3	3	8	3	3	2	8	3	3	2			
100		48	M	Pattabhira	12	Fire Ser	Marri	Hind	Tami	20000	Mid	Nucle	Good	34	14	5Yrs	N	Ris	N	Poo	N	N	N	N	N	N	86	15	25	46		26	19	64	3	40	17	4	4	3	3	3	6	2	2	2	8	3	1	1	1	2	5	2	2	1	4	1	2	1			

Topi Factors Determining Functional Remission In Schizophrenia

PANSS-Positive and Negative Symptoms Scale

GAF-Global Assessment of Functioning

CGI-Clinical Global Impression

PSRS-Psycho Social Remission Scale

FROGS-Functional Remission of General Schizophrenia

SES-Socio Economic Status

DOI-Duration of Illness

DUI-Duration of Untreated Illness

ECT-Electro Convulsive Therapy

General Ps