A STUDY ON QUALITY OF LIFE (QOL)

IN PATIENTS WITH SCHIZOPHRENIA

DISSERTATION SUBMITTED FOR PARTIAL FULFILLMENT

OF THE RULES AND REGULATIONS

DOCTOR OF MEDICINE

BRANCH - XVIII (PSYCHIATRY)

THE TAMILNADU DR.MGR MEDICAL UNIVERSITY,

CHENNAI,

TAMIL NADU.

APRIL 2016

CERTIFICATE

This is to certify that the dissertation titled, **"A STUDY ON QUALITY OF LIFE IN PATIENTS WITH SCHIZOPHRENIA"** is the bonafide work of **Dr. SUBASHINI. S**, in part fulfillment of the requirements for the M.D. Branch – XVIII (Psychiatry) examination of The Tamilnadu Dr. M. G. R. Medical University, to be held in April 2016. The period of study was from July 2015 – Sep 2015.

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DECLARATION

I, **Dr. SUBASHINI. S**, solemnly declare that the dissertation titled, **"A STUDY ON QUALITY OF LIFE (QOL) IN PATIENTS WITH SCHIZOPHRENIA"** is a bonafide work done by myself at the Madras Medical College, Chennai, during the period from July 2015 - Sep 2015 under the guidance and supervision of **Prof. Dr. JEYAPRAKASH R. MD, DPM,** Professor of Psychiatry, Madras Medical College. The dissertation is submitted to The Tamilnadu Dr. M. G. R. Medical University towards part fulfilment for M.D. Branch XVIII (Psychiatry) examination.

Place:

Date: **Dr. SUBASHINI. S**

ACKNOWLEDGEMENTS

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI-3

CERTIFICATE OF APPROVAL

To
Dr.S,Subashini,
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Dear Dr. S,Subashini,,

The Institutional Ethics Committee has considered your request and approved your study titled **"A study on quality of life in patients with the SCHIZOPHRENIA" No.15052015.**

The following members of Ethics Committee were present in the meeting held on 12.05.2015 conducted at Madras Medical College, Chennai-3.

11. Prof.C.Rajendran, M.D.,	: Chairperson
12. Prof.R.Vimala, M.D., Dean, MMC, Ch-3	:Deputy Chairperson
13. Prof.B.Kalaiselvi, M.D., Vice-Principal, MMC, Ch-3	: Member Secretary
14. Prof.B.Vasanthi, M.D., Prof. of Pharmacology, MMC	: Member
15. Prof.P.Ragumani, M.S., Professor of Surgery, MMC	: Member
16. Prof.Saraswathy, M.D., Director, Pathology, MMC, Ch-3	: Member
17. Prof.K.Srinivasagalu, M.D.,Director, I.I.M. MMC, Ch-3	: Member
18. Thiru S.Rameshkumar, B.Com., MBA	: Lay Person
19. Thiru S.Govindasamy, B.A., B.L.,	: Lawyer
20. Tmt.Arnold Saulina, M.A., MSW.,	: Social Scientist

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.

Member Secretary, Ethics Committee

VICE PRINCIPAL
MADRAS MEDICAL COLLEGE
CHENNAI-3.

A Study on Quality of life of patients with Schizophrenia

BY 201328005.MD.(PSYCHIATRY) SUBASHINI S

1. INTRODUCTION

Psychological health issues have become a topic of concern over the past years and have found an important place in policy agendas all over the world.

Estimates found that this burden will raise several fold over the next few decades.

World Health Organization points out that, apart from the number of people with mental illness, the following factors put together measure the suffering.

- their isolation,
- the productivity that is lost,
- the hindrance to the human development
- and the brake on society in general

To the individual the mental disorder causes a massive disruption to their lives impairing quality of life and posing a burden to their caregivers.

Schizophrenia, which is one of the most devastating disorder is found all over the world in every geographical location (Saha et al, 2005).About 24 million people around - the world have schizophrenia (WHO 2001).Schizophrenia is associated with higher mortality rates especially in the younger age groups(Knapp et al. 2004).It causes a inability to work. It is a disabling illness which is associated with relapses and increased number of hospitalizations (Almond et al.2004). The economic implications of the disease extend beyond the use of health and personal social services to its morbidity and mortality implications as well as its impact on

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and increased number of hospitalizations (Almond et al.2004). The economic implications of the disease extend beyond the use of health and personal social services to its morbidity and mortality implications as well as its impact on the quality of life of patients and their families. Many people with schizophrenia experience stigma caused by other people's knowledge, attitudes, and behavior; this can lead to impoverishment, social marginalization, and low quality of life (Thornicroft et al. 2009).

Quality of life has emerged as the ideal of modern medicine viewed from a biopsychosocial perspective. The concept has been increasingly used as an important attribute in patient care and clinical studies as well as the basis in many health economic evaluations. The quality of life individuals in general population was found to be greater than that of individuals with schizophrenia (Lehman et al, 1982; Evans et al. 2007; Gupta et al. 1998; Bobes & Carcia-Portilla 2006;Bengtsson-Tops & Hansson 1999; Ponizovsky et al. 2003). Thus, enhancing the quality of life of such patients has become imperative and has been included in all international clinical guidelines .

In treating and managing Schizophrenia, clinicians often focus on treating psychotic symptoms and ignore factors that are directly related to

quality of life and prognosis of disease. Evaluation of patient's quality of life can help a lot in improving quality of care in Schizophrenic patients.

The commonly used and complete definition of quality of life was given by WHO quality of life Group (1995) where it was defined,- "as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". Another rather simple and informal definition of QOL was provided by Lehman (1996), "as patients' perspective on

- what they have,

- how they are doing and

- how they feel about their life circumstances".

The determinants of quality of life and their relative contribution to the same, has to be studied to precisely assess the quality of life. Lehman et al. (1982) and Lehman (1983) in their studies identified family relationship, social relations, safety, paid work, economic stability as the primary determinants of quality of life. Another study concluded that social relations and finances are the main determinants of quality of life for chronic psychiatric patients. Sullivan et al. (1991) gave more

importance to social relations and finances among the factors the influenced quality of life.

Levitt et al. (1990) found that satisfaction with social life, admissions in previous year and frequency of relative visits are prime determinants of quality of life.

REVIEW OF LITERATURE

Defining Quality of life

Multiple definitions are available for quality of life, which makes it difficult to measure and use in research. As a disorder is found to alter the biological self, the psyche, the social integrity and the economic wellbeing of an individual, the definition should include all these , at the same time delineating each one of them. Hence it is necessary to determine specific aspects of QOL that is affected by various diseases and treatment. A definition of QOL must be equally relevant to both general population and to all defined population subgroups. Over the last few decades, lots of definitions have been framed- most of them from theoretical, focusing on psychological issues like wellbeing and life satisfaction to issues relating to standard of living. (Awad and Voruganti, 2012)

WHO definition

The WHO defines QOL as "*an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns*".

Definition by Friedman

"QOL can be defined by a combination of joy, peace, love, and self esteem."

Definition in relation to the comprehensive quality of life scale(Cummins,1997)

"Quality of life is both objective and subjective, each axis being the aggregate of seven domains: material wellbeing, health, productivity, intimacy, safety, community, and emotional wellbeing. Objective domains comprise culturally relevant measures of objective well being. Subjective domains comprise domain satisfaction weighted by their importance to individuals."

Definition by Campbell et al.(1976)

"Quality of life is a vague and ethereal entity, something that many people talk about but which nobody clearly knows about."

In 1984 Calman framed a definition stating that quality of life is the gap between the patient's expectations and achievements. A broad based definition by Ware (1984) viewed quality of life, as" hierarchical concentric circles". Illness being at the centre, surrounded by outer circles of functioning, feeling of wellbeing, and agony, to on the whole health awareness and finally to social functioning. Quality of life is a subjective

experience by an individual (WHOQOL Group 1995, Harrison et al. 1996, Haas 1999, Bowling 2003, Moons et al. 2006) .Definition of quality of life given by each individual will thus be unique to their own life (Browne et al. 1997, Fayers & Machin 2007). However, various researchers have arrived at a consensus of defining quality of life as "having a positive psychological outlook and emotional well-being, having good physical and mental health and the physical ability to do the things they want to do, having good relationships with friends and family, participating in social activities and recreation, living in a safe neighborhood with good facilities and services, having enough money and being independent" (Bowling, 2005).

Health related quality of life is another term which emphasis the role of illness and its absence on the wellbeing of self (Danovitch & Endicott 2008). Health was defined by WHO six decades ago, as "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*". It is one of the domains of overall quality of life (Bowling 2005;Moons et al. 2006). WHO has thus defined quality of life base on this domain as "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (1993,WHO quality of life Group). Both quality of life and HRQOL are used in research in fields of health. According to Moons et

al. 2006 having a focus on health related quality of life will underestimate the influence of factors that are not medical .Clearly none of the definitions are agreed upon and there is a need to frame definitions for quality of life according to the individuals and region under study, course and stage of the disorder and its treatment ,in relation to social expectations at some point of time.

Though **there is no consensus definition for quality of life**, certain characteristics of quality of life has to be agreed. Firstly, Quality of life is individual oriented as he is the one who experience and is the final assessor of his life events. Secondly, quality of life is multidimensional and it depends on conceptual, pragmatic and empirical purposes for which it is studied. Thirdly, quality of life changes day to day and has its own individuality i.e., each person perceives his quality of life different from others.

Quality Of Life Assessment

A number of tools exist for assessing quality of life due to lack of conceptual clarity. (Bowling 2003).

First, Quality of life assessment has different focuses namely,

- Emotional wellbeing

- Psychological wellbeing

- Social wellbeing

- Physical health

- Roles And Functioning in society.

Second, the type of instrument also varies (Fayers & Machin 2007) as follows

- single-item scales including a single global question,

- multi-item scales producing a total single score, and

- multi-item scales producing a profile of items

According to Danovitch & Endicott ,2008,the instruments used in mental health research are usually multi-item scale and include physical domain, psychological domain and social domain.

Third, in health care set up there are two types of Quality of life assessment instruments: disease specific and generic (Dijkers 1999, Hays 2005).

Generic instruments are used across various diseases and disorders and for people without illnesses. They assess the relative load of distress among different illness but it will not assess the specific aspects of quality of life, which is distinct to a certain patient group.

Disease specific instruments focus on issues specific to the illness and have high sensitivity. Both types do not focus on social aspects of life (Katschnig 2006). An example of generic instrument for measuring QoL

is WHOQOL (The WHOQOL Group, 1994; 1995). It was developed as a multinational, multicenteric and multilingual instrument. It subjectively evaluates the respondent under six broad domains and 24 sub-domains of quality of life.

Dijkers in 1999 and Priebe in 2007 gave two strategies to study quality of life, one is subjective and the other is objective.

The world health organization's definition of quality of life gives importance to the individual's perception of their life and reveres the fact that he is the best candidate to assess his quality of life.

As the patients with schizophrenia have a lack of insight and have cognitive impairments the validity of their assessment becomes questionable (Atkinson et al. 1997, Doyle et al. 1999).

On the other end of the tunnel ,the studies done by Voruganti et al. 1998, Naber et al. 2005, Nørholm and Bech 2006 discuss that most of the patients with psychiatric illness are able to assess their quality of life.

Finally, there is a model called quality adjusted life years. In health economics ,QALY evaluates health benefits in both mortality and morbidity.Respondants swap between the quality and quantity of life. In cost utility analysis quality adjusted life years has gained importance. (Cummins & Lau 2006.)

In a systematic review of 293 studies conducted by Anneli Pitkane et al.2010, outlined the twenty most often used quality of life instruments.

Table 1. QoL instruments used in research among patients with schizophrenia during the period 2005–2009

	Instruments	Number of articles
1	Quality of Life Scale (QLS, also QOLS); Heinrichs et al., 1984	98
2	The World Health Organization Quality of Life (WHOQOL-100/short form WHOQOL-BREF); WHOQOL Group, 1995	46
3	Medical Outcome Study (MOS) 36-Item Health Survey (SF-36/Short form SF-12); Ware & Sherbourne, 1992	32
4	Lehman Quality of Life Interview (QOLI, also QLI-L); Lehman, 1988	27
5	Manchester Short Assessment of Quality of Life (MANSA); Priebe et al., 1999	19
6	Euroqol EQ-5D (EQ-5D); Brooks with the EuroQoL Group, 1996	12
7	Schizophrenia Quality of Life Scale (SQLS); Wilkinson et al., 2000	12
8	Subjective Wellbeing under Neuroleptic Treatment (SWN/Short form (SWN-K); Naber, 1995	11
9	Lancashire Quality of Life Profile (LQOLP); Oliver et al., 1997	9
10	Quality of Life Enjoyment and Satisfaction Questionnaire Q-LES-Q; Endicott et al., 1993	9
11	Wisconsin Quality of Life Index (W-QLI); Diamond & Becker, 1999	6
12	Satisfaction with Life Domains Scale (SLDS); Baker & Intagliata, 1982	4
13	Quality of Well-Being (QWB); Anderson et al., 1989	3
14	Human Service Scale (HSS); Reagles & Butler, 1976	2
15	Impact of Weight on Quality of Life–Lite Scale (IWQOLLite); Kolotkin et al., 2001	2
16	Menopause-Specific Quality of Life Questionnaire (MENQOL); Hilditch et al., 1996	2
17	Satisfaction with Life Scale (SWLS); Pavot et al., 1991	3
18	15D Measure of Health-Related Quality of Life (15D); Sintonen, 2001	1
19	Affect Balance Scale (ABS); Bradburn, 1969	1
20	Assessment of Quality of Life (AQoL); Hawthorne et al., 1999	1

According to the review there are numerous instruments to assess quality of life in patients with schizophrenia which differ in form and type. The generic instrument must be apt for collection of data and evidence regarding its psychometric properties and its feasibility should be available.

Quality Of Life Assessment in Mental Health Care

The necessity to assess the quality of life in patients with mental illness arose due to '***deinstitutionalization***' that is discharge of patients with residual symptoms from institutions into the community. Hence there arose the need for healthcare providers to analyze whether this deinstitutionalization led to increase in life satisfaction of the patients.

Quality Of Life assessment as part of outcome assessment in mental health care

Measuring the outcome and interpreting it is difficult in mental services. Quality of life is just one of the outcome measures. Tansella and Thornicroft (1998) 's 'matrix model' delineates two dimensions: the geographical, (country, local, and patient) and the temporal (input, process, and outcome). In the nine cell matrix, quality of life forms the important issue in the cell formed by patient level and outcome phase. The same has been stressed by the study by Hansson(2002).

Quality Of Life In Patients With Schizophrenia

Schizophrenia is a syndrome which is included in the wider spectrum ' psychosis', where there is loss of reality. It is characterized with delusions, hallucinations, irrational thinking and bizarre behavior. *Internationally the prevalence of schizophrenia is 0.5 to 1% , and the incidence rate for a year is 0.5 to5 in 10,000 people.* The common age of onset of schizophrenia is in early20s 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 and predominant negative symptoms like withdrawn behavior, lack of expression, disinterest, lack of motivation, not communicative, slow in thoughts and activities are more likely to be male and people with late onset are found to be female characterized with less damage to brain structures.

Demographic profile and the quality of life in patients with schizophrenia

On searching for meta-analysis and reviews for relation between socio demographic profile and quality of life seven articles were found. There was no gender differences in the WHOQOL questionnaire assessed quality of life in a study conducted by Xiang et al (2010). which included 251 males and 254 females from Beijing, China. However, women had

lower physical health domain scores in respect to quality of life compared to males. Authors attributed the lowered score to discrimination that females with the illness face in Chinese society.

Narvez et al study involved 88 outpatients in United States. Lehman quality of life Interview was used in this study. Study showed that females with late onset of schizophrenia and those with less education had lower quality of life. However, there was no analysis regarding the relation between quality of life, employment and marital status. In Brazil, Quality of life scale was used in a study by Cardoso et al, which involved 123 outpatients. This study revealed that the male gender who were single and had low education level and income had low quality of life. In France, Caron et al .did a study in 143 patients using Satisfaction with Life Domains Scale. It was a two phase study which studied relationship between quality of life, demographic profile, coping skills and stressors within a 6 months interval. Study concluded that relationships that are close would enhance emotional wellbeing and therefore the quality of life.

418 patients from Sweden were included in a study by Hansson et al (2002). Lancashire Quality of life profile was used. It was found that quality of life was greater in individuals who enjoyed privacy and autonomy due to private housing facilities. Bell, Bryson and Lysaker

(2002) examined the connections between quality of life and salaried job in a specimen of 97 outpatients with the disorder by utilizing of the Quality of life interview and Quality of life scale in the United States of America. The study revealed that salary enhanced the quality of life for individuals with schizophrenia. The outcomes demonstrated that an expanded number of days the individuals work had high aggregate QLS scores.

An analysis was done between quality of life, gender and marital status of people with schizophrenia by Salokangas et al(2001) in Finland. In the study, interviews were directed with 1,750 men and 1,506 women subjects with schizophrenia utilizing the Global Appraisal Scale (GAS). The outcomes uncovered that solitary males had a lower quality of life than others in practically all of the measurements, including working environment, every day working, lodging condition, number of partners, furthermore, psychosocial solidness. By and large, females were happier with their personal lives and relationships than males unaffected by their marital status.

Schizophrenia and Quality of life world-wide

In a Nigerian study, Adewuya and Makanjuola studied the relationship between perceived quality of life and demographic attributes in 99 subjects with schizophrenia utilizing the WHO quality of life

survey. The research demonstrated that lesser perceived quality of life was connected with unemployment and poor social backing.

The same Nigerian research uncovered that individuals with schizophrenia saw their quality of life to be poorer than quality of life s in other areas of the world.   Nigeria is a region where there is poor services for treatment and rehabilitation, which might have contributed to the poorer quality of life in these individuals.

In Greece, Dyson , Dimitriou and Anthony (2009) utilized the quality of life index and the Subjective Quality of Life Profile (SQLP) to investigate 101 subjects with schizophrenia and their quality of life . There was no correlation between marital status, age, sex and quality of life in these individuals with schizophrenia. They clarified the homogeneity of the populace and the high stigmatization of individuals with psychological disorders such that individuals with schizophrenia experience issues acquiring work and discovering accomplices. In any case, just the level of literacy was connected with quality of life; members with higher education reported better quality of life. Individuals with higher education have the capacity to expect a good outcome after the treatment which drives them to perceive a greater quality of life. Canadian rendition of the Wisconsin Quality of Life Index (CaW-QLI) was used in Canada by Caron et al. (2005) to inspect the connections

between the quality of life and demographic qualities for 181 outpatients with schizophrenia. They observed that females appreciated a superior quality of life in the range of activities of living (e.g., arrangements for living and status of working) than males. This can be due to the customary and social components that mandates females to be more included in family exercises and shopping. Be that as it may, in the range of instruction, tertiary-taught members reported higher mental prosperity than those with just an essential training. The scores of social support, personal wellbeing, interpersonal relationships and overall quality of life were found to be higher in people who were employed than those who were unemployed.

About 172 patients with schizophrenia were studied for quality of life by Chan and Yu (2004) in Hong Kong using the WHO quality of life Chinese version. The study uncovered that the subjects who were not employed were not satisfied by their quality of life than others. Females had a poorer quality of life than males in the areas of safety, life pleasure, relaxation, and individual wellbeing. These distinctions between males and females were explained by the authors as due to the cultural beliefs of the region. In Hong Kong females still possess a position that is socially below the standard of men. Along these lines, ladies are more vulnerable to law violations, for example, assault, rape, and domestic violence.

Mubarak et a1 (2003) did a study on quality of life of 174 persons with schizophrenia in Penang, Malaysia. The members were evaluated with the Quality of life interview. The study demonstrated that individuals who were with schizophrenia and who had been in deinstitutionalized environment confronted numerous difficulties in their regular lives in the areas of lodging, every day activities, , money, work, social relations and wellbeing. The authors advised the formation of community based rehabilitation offices, which are significant for bringing about group base treatment of individuals in Malaysia.

Lancashire's quality of life profile was used in a study to assess the quality of life in 120 patients with schizophrenia. This Sweden based study was done by Hansson and Bengtsson-Tops (1999). The study's result demonstrated that the members were for the most part satisfied by religion and for the most part disappointed with work and money. The frustration with the money related area in individuals with schizophrenia in Sweden is because they have issues taking care of their own accounts; and for the rest, the high disappointment points out to the stresses over the future and dependency, which may be due to changes in the allowances framework concerned with housing and the expenses of drug in the community. There were no connections between demographic profile, for example, age, social status, marital status, sexual orientation,

business, , and family relationships, and quality of life . In Ireland, Browne et al.measured the quality of life in 64 subjects who were going to a rehabilitation focus and looked at the relationship between quality of life and demographic qualities utilizing Quality of Life Scale (QLS). The outcomes uncovered that the members appraised their quality of life at less than half of the maximum score of the Quality of life scale, found to be due to the local norms of the catchment region, as every item of the quality of life scale is scored with respect to standards confined to the specific areas. Nonetheless, there was no clarification given by the authors about those norms that influenced the quality of life of individuals with schizophrenia in Ireland. People who lived individually had increased quality of life than those in hostels.

Quality of life of people with schizophrenia in cross cultural studies

Heider et al (2007) did a longitudinal study to study factors affecting quality of life in 3 countries namely, Germany, France and United kingdom.288 individuals from France,302 from Britain and 618 from Germany were included in the 6 months interval study over 2 years. United Kingdom reported lower quality of living health issues, safety issues, legal issues, accommodation and day to day functioning.

Daradkeh and Al Habeeb (2005) examined 211 subjects with schizophrenia for their quality of life ,they were from two outpatient

facilities in Riyadh, Irbid and Jordan, Saudi Arabia. The members were requested to fill the schizophrenia Quality of life scale. The same study had been used to study the validity and reliability of the scale in the Arab population.. They studied that about a 25% of patients saw their general wellbeing as fantastic or great; one third lived up to their desires, and the reason for evaluating quality of life high was due to the social support got from relatives. In addition, sexual orientation and marital status were observed not to be associated to quality of life , while work placement furthermore, advanced education levels were emphatically identified with better quality of life .

The attitude towards work, incentives and its effect on quality of life were compared in 72 outpatients with schizophrenia.3 cohorts each from Switzerland, USA and, Germany was examined with Lancashire's quality of life profile . The study revealed that employment was associated with better quality of life. In industrialized countries the relationship between employment and quality of life were same. Vandiver (1998) inspected the quality of life for 102 individuals ,male and female with schizophrenia in the USA, Canada and Cuba utilizing the Quality of life interview. They discovered that there was no difference between males and females in the consolidated sample. In Canada and Cuba males and females showed distinction in their quality of life in the social

relationship space. In Canada, ladies reported higher quality of life for social connections on the grounds that they found themselves able to access Canadian health services which permitted them to communicate with others. Conversely, Cuban ladies reported lower quality of life for social connections, they had numerous roles to play like employee, spouse and a caregiver who makes their social relationship constrained.

Warner et al. (1998) utilized the Lancashire's quality of life profile to analyze the quality of life of 100 individuals from Boulder, Colorado, in the USA and 70 individuals from Bologna, Italy who had schizophrenia. They assumed that the divergent society and psychological health administrations in the two nations would prompt contrasts in the quality of life for individuals with schizophrenia. The outcomes demonstrated a lower quality of life in individuals from the general population in Boulder than in individuals with schizophrenia in Bologna . A few determinants that favored Bologna over Boulder are higher rates of marriage, more prominent length of livelihood, higher pay rates, more prominent aggregate income, less money related problems, and residential permanence. Further people in Bologna were with their family which ensured the supply of basic requirements of housing, finance, food and home care.

Factors affecting quality of life in patients with schizophrenia

Psychopathology and illness severity

There is a continuous enthusiasm in studying the effects core symptoms of schizophrenia on quality of life. Almost half of all patients with schizophrenia report a favorable quality of life in spite of the presence of symptoms of psychosis. Various studies, including meta-analyses, found more amounts of global clinical symptoms being associated with less quality of life in patients with schizophrenia (Browne et al, 1996; Heider et al, 2007; Daradkeh et al, 2005; Al Habeeb et al, 1998) For instance, in a latest study in patients with chronic schizophrenia, of the aggregate variance in quality of life, symptoms clarified half and social variables clarified 16%. *Multivariate examinations* affirmed that particularly less depressive symptoms and greater social relationships essentially predicted a higher quality of life (Preibe et al, 1998). Most socio-demographic variables don't contribute to self-rated quality of life .With the special case that higher rates of quality of life were reliably reported by females when compared with male patients with schizophrenia (Vandiver et al,1998).

Aggregated information of 886 patients with schizophrenia demonstrated that variations in symptoms were connected with changes in quality of life. These and other results have prompted

recommendations that quality of life scales in patients with schizophrenia may share too much variance with symptoms and in this manner not be a valid independant outcome criterion. However, encourage multivariate analysis by Priebe et al (1998) illustrated that just relationship between changes in depression, anxiety, and hostility were related with changes in quality of life. The authors reasoned that quality of life changes are impacted by symptom change, specifically depression and anxiety, yet the level of impact is most certainly not sufficiently strong to trade off quality of life as an autonomous outcome measure.

Different cross-sectional and longitudinal studies affirmed a close relationship between depressive symptoms with impeded quality of life in patients with schizophrenia (Maurino et al, 2011)The higher the depression score the more the negative effect on patients' quality of life (Dan and others,2011).The effect is more pronounced during the early course (Rocca et al,2009) . Anxiety symptoms and anhedonia are associated with low quality of life in depressed patients with schizophrenia (Ritsner et al,2013). For instance, an imminent observational study found an increment in social anxiety more than 5 years altogether connected with an abatement in quality of life in remitted patients with schizophrenia after deinstitutionalization (Kumazaki et al,2012). Affective symptoms exceed positive symptoms

in influencing perceived quality of life in individuals with schizophrenia (Ritsner et al, 2014). According to a long term study of over ten years, decrease in depressive symptoms with an increase in self efficacy and social support predicted an improvement in quality of life . In a study conducted by Alonso J, Croudace T, Brown J, et al(2009). 18-month trial, quality of life was best anticipated by anxiety, depression, and self-esteem, and to a lesser degree by global functioning and social integration (Meijer et ai,2009).

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. In a work done by Rabinowit et al (2013) in 1447 patients it was found that presence of negative symptoms was associated with decrease in health utility and expert rated quality of life. This and various studies propose that negative symptoms have a negative correlation with expert rated but not with self rated quality of life .most of the studies suggest to use both self and expert rated instruments to study quality of life.

Symptomatic remission is the relative absence of hallucinations, delusions, disorganized behavior and speech according to symptomatic remission criterion .Through a number of cross sectional and longitudinal

studies it has been found that symptomatic remission in schizophrenia has resulted in enhanced quality of life.

Docherty et al (2007) studied a group for a year who where on antipsychotic treatment and found that patients who had symptom remission had better subjective quality of life and better approach to treatment than the group who had symptoms.

Another study highlighted that absence of symptom remission in early phase of illness had poorer quality of life (Haynes et al, 2012).

Also early subjective feeling of wellbeing was associate with enduring symptom free periods (De Haan et al,2008).However, the remission criteria does not include the absence of depressive or anxiety symptoms and includes only the core symptoms. It has been found that the individuals who persist to have depressive and anxiety symptoms even after remission from core symptoms have low quality of life (Carpiniello, 1997).

Insight and quality of life

Insight is defined as the ability to understand that one has mental illness or is experiencing psychopathology. Schizophrenia is the disorder which has increased association with lack of insight when compared to other psychotic disorders. For a long time lack of insight was considered

the epitome of schizophrenia. Now there are two schools of thought, one is that people with poorer insight have a better quality of life when compared to people with insight ,This is because in people with greater insight have internal stigmatization of the illness ,depression due to illness realization, reduced self esteem and social withdrawal .

Second school of thought is that due to the link between increased insight and medication adherence, there is early symptom reduction and improved functioning thereby leading to a better quality of life . More comprehensive studies are needed in this arena and socio-demographic profiles have to be incorporated in such studies.

Quality of life and treatment concerns

Assessing quality of life has been approved by FDA as an outcome measure to quantify the effect of antipsychotic treatment. Lot of studies have shown an increase in quality of life after antipsychotic treatment which is associated with remission of symptoms, medication compliance subjective wellbeing, low dysphoria and side effects9Lambert et al,2007;Schimmelmannet al,2005;Putzhammer et al,2005;dehaan et al,2002;Karow et al,2007;Sugawara et al,2013). Patients after their treatment with antipsychotics for their first episode psychosis showed lowered quality of life which improved over a period of time (Yeh et al, 2013). Regarding the introduction of second generation of antipsychotics,

the quality of life after treatment with SGAs was better when compared to first generation drugs, perhaps due to the lower neuroleptic induced dysphoria with SGAs (Hayhurst et al, 2013).But most of these studies used QLS a scale which studies negative symptoms and patient's functioning rather than patient's perspective as defined by the WHO (Harway et al, 2009; Alwad et al, 2013).

Schizophrenia is a chronic mental illness which requires pharmacological treatment for long periods. In addition to the treatment patients has to suffer the side effects that the drugs produce in the individuals (Fakhoury et al., 2001), which as often as possible result in an early stopping or changing of prescription (Lieberman et al., CATIE-study 2005; Kahn et al., 2008; Ücok and Gaebel, 2008). Over the past 30 years there have been several studies which have reported the ill effects of these drugs on the individual's satisfaction with life and self.(e.g., Voruganti, 1997). Studies by Naber, 1998; Voruganti et al., 2002; Hofer et al., 2004 all point out to the fact that adverse effects due to the antipsychotics is one of the determinants for the perceived quality of life.

Disability and quality of life

Disability as described by WHO is a "complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives". Disability can result due to

27

psychiatric disorders as well which is known as psychiatric or psychosocial disability. Anthony et.al., recommended that a comprehension of psychiatric disability ought to be derived from the deficiencies that impact the living, learning and workplaces of a person. Liberman additionally underscored that inabilities ought to be measured and assessed in a social setting.

Ronald, Anton and Hans reasoned that disability is connected with schizophrenia, as other psychiatric issue. Chaves et al. found that men had greater handicap than females; however they reported no distinctions in social role execution between the sexes. Interestingly, an Indian study by Radha et al.reported that ladies were more incapacitated than men, which was a direct result of the prevalent social conditions.

Perceived social support and quality of life in patients with schizophrenia

Social contact satisfies the individual needs of psychiatric patients for love and advances self-regard. Social contact likewise adds to a sense of connection in individuals with schizophrenia (Corrigan, 2003). Accessibility to community support groups has increased the quality of life in people with psychiatric disorders (Trauer et al., 1998). Sadly, various activities that can possibly satisfy essential individual

requirements for community relations are not available to individuals with schizophrenia in psychological health settings.

In addition, individuals with schizophrenia have little, poor-interpersonal relationship constituting mostly of relatives (Brunt & Hansson, 2002). This absence of social communities in psychologically unwell patients may add to symptoms, which in turn lead to decreased quality of life.

Past studies have shown that increased social backing can enhance the QOL of persons with schizophrenia (Yanos et al., 2001; Nelson et al., 1995). Social support acts to support the effect of distressing encounters, for example, those identified with physical wellbeing (Swindells et al., 1999).

Though there had been a lot of studies worldwide, the study of quality of life in Indian subcontinent has been meager. In a country like India with diversified population assessing quality of life is a challenge to the clinicians. So it becomes necessary to do a lot of research in this domain to have information regarding factors that affect quality of life.

AIMS AND OBJECTIVES OF THE STUDY

The main purpose of this study was to evaluate the quality of life in patients with schizophrenia in Indian population.

AIM

1) To determine the quality of life in patients with schizophrenia

2) To compare it with individuals without mental illness in general population.

3) To study the relation between age, gender, marital status, education, employment, psychopathology, insight, disability, psychotropic's side effects, social support and quality of life in patients with schizophrenia

HYPOTHESIS

1. **Quality of life of patients with schizophrenia is lower than quality of life of individuals without mental illness.**

2. **Quality of life of patients with schizophrenia is influenced by demographic factors, clinical profile, psychopathology, insight, disability antipsychotics side effects and social support.**

The **Research Questions** are

a. How patients rate their quality of life in different domains?

b. How each domain influences the patients overall quality of life?

c. How it differs from that of people with schizophrenia?

d. What are the effects of different age groups on the quality of life?

e. What are the effects of gender on quality of life?

f. What are the effects of marital status on quality of life?

g. What are the effects of education on quality of life?

h. What are the effects of employment on quality of life ?

i. What are the effects of religion on quality of life?

j. Does duration of illness have an influence on the quality of life?

k.   Does phase of the illness affect the quality of life?

l.   Does duration of treatment and number of hospitalizations have an effect on quality of life?

m.   Are there any differences among the perceived quality of life among different subtypes of schizophrenia?

n.   How positive syndrome affect quality of life?

o.   How negative syndrome affect quality of life?

p.   How general psychopathological symptoms affect quality of life?

q.   How depressive symptoms affect quality of life?

r.   Does the presence or absence of insight affect the quality of life?

s.   Does disability affect the perceived quality of life in patients with schizophrenia?

t.   Do unwanted effects of antipsychotic drugs have an effect on quality of life?

u.   Does perceived social support have an effect on quality of life?

These research questions formed the core essence to formulate the questionnaire based analysis. Based on this the questionnaire was compiled incorporating all globally validated scales .

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 July 2015 to conduct the research in Institute Of Mental Health of Madras Medical College. The ethical committee approval document is enclosed in the appendix.

Nature and point of the study, voluntary participation, the capacity to pull back 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 potential participants.

STUDY DESIGN, SETTING AND SAMPLE

The study was a Cross sectional Case control study performed in Institute of Mental health.

SAMPLING

A Consecutive purposive sampling technique was under taken 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 quality of life for the group of people with schizophrenia. It was a purposive, judgmental and non random selection procedure.

STUDY GROUP

The 50 subjects for the study group were selected from the patients attending the outpatient department of Institute of mental health. The study was conducted from July 2015 to September 2015. The members of the study group fulfilled the inclusion and exclusion criteria as follows

Inclusion criteria

1.   Subjects diagnosed to have schizophrenia according to ICD-10 criteria belonging to all subtypes.

2.   Subjects of either sex between age group 18-45 years.

3.   Subjects who were willing to participate, after an informed consent.

Exclusion criteria

1.   Subjects with other mental disorders.

2.   Subjects with other medical conditions.

3.   Subject with neurological disorders.

CONTROL GROUP

The 50 subjects for the control group were selected from the attendees of other mental disorders patients coming to Institution of mental health. The study was conducted from July to September 2015.The subjects of the control group fulfilled the inclusion and exclusion criteria.

Inclusion criteria

1. Subjects of either sex between the age groups 18-45 years.

2. Subjects willing to participate in the study.

Exclusion criteria

1. Subjects with any mental disorder.

2. Subjects with other medical conditions.

3. Subjects with neurological disorders.

TOOLS

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

1. Socio demographic details

2. Disease related characteristics (only for study group) which included

a. Duration of illness

b. Phase of the illness

c. Number of hospitalizations

d. Family history of illness

e. Duration of treatment

➢ **World health organization-quality of life (WHOQOL-BREF)** questionnaire to evaluate the quality of life.

➢ **Positive and negative syndrome scale (PANSS)** to assess psychopathology in patients with schizophrenia.

➢ **Calgray depression scale for schizophrenia (CDSS)** to assess depression in patients

➢ **Beck's cognitive insight scale** to assess insight in patients with schizophrenia.

➢ **WHODAS-II scale** is administered to evaluate disability due to the illness

➢ **UKU side effects scale** to evaluate unwanted effects of antipsychotics in patients with schizophrenia.

> ➤ **Social support questionnaire** for assessing perceived social support in patients with schizophrenia.

DESCRIPTION OF INSTRUMENTS

WHOQOL-BREF

WHOQOL-100 is the scale that was developed from field trial data. WHOQOL-BREF is the short version of the WHOQOL-100. WHOQOL-BREF is a 26 item questionnaire. It includes two benchmark questions one for overall quality of life and the other for overall health. The scores are transformed on a scale from 0 to 100 to enable comparisons to be made between domains composed of unequal numbers of items. The domains and its components are-

1. **Physical health**

   i.   Activities of daily living

   ii. Dependence on medicinal substances and medical aids

   iii. Energy and fatigue

   iv. Mobility

   v.   Pain and discomfort

   vi. Sleep and rest

   vii. Work Capacity

2.   Psychological

    i.   Bodily image and appearance

    ii.   Negative feelings

    iii.   Positive feelings

    iv.   Self-esteem

    v.   Spirituality / Religion / Personal beliefs

    vi.   Thinking, learning, memory and concentration

3.   Social relationships

    i.   Personal relationships

    ii.   Social support

    iii.   Sexual activity

4.   Environment

    i.   Financial resources

    ii.   Freedom, physical safety and security

    iii.   Health and social care: accessibility and quality

iv.   Home environment

v.   Opportunities for acquiring new information and skills

vi.   Participation in and opportunities for recreation / leisure activities

vii.   Physical environment (pollution / noise / traffic / climate)

viii.   Transport

POSITIVE AND NEGATIVE SYNDROME SCALE FOR SCHIZOPHRENIA (PANSS)

This is a 30m item semi structured interview. It is used to assess the positive, negative and general psychopathology symptoms. It has 7 items for positive symptoms, 7 items under negative symptoms domain and 16 items under general psychopathology domain. It is scored relying on information of the past week, on a 0-6 point continuum. Kay et al.(1987) developed this instrument. The psychometric estimates showed Cronbach's alpha of 0.809 and 0.931for internal consistency and reliability.

CALGARY DEPRESSION RATING SCALE FOR SCHIZOPHRENIA (CDSS)

Formulated by Addington et al. (1993, 1996), derived from Hamilton rating scale for depression and Present state examination. Its purpose is to evaluate the degree of depression present in patients with schizophrenia. It is a 9 item scale with 8 structured questions and one

observable item. It is rated in a scale of 0-3.Scores more than 6 indicate the existence of depression. The scale has a Cronbach's alpha of 0.79.

BECK'S COGNITIVE INSIGHT SCALE

Beck Cognitive Insight Scale (BCIS) (Beck et al., 2004) was created to assess how people with psychosis realize their own thinking procedures, convictions and judgments. It was developed by Beck et al. in 2004...It is a 15 item scale with subscales of self reflectiveness and self certainty. Self reflectiveness subscale has 9 items and self certainty has 6 items. The items are rated in a 4 point scale ranging from do not agree to completely agree. The self certainty domain has score ranging from 1-18 and gives us information about the patient's certainty about self and their resistance to correction. The self reflectiveness subscale carries scores from 0-27 and measures the expression introspection and willingness to acknowledge fallibility.

UKU SIDE EFFECT RATING SCALE

The Scandinavian Society of Psychopharmacology developed this scale for assessing the side effects of antipsychotic drugs. It was the work done by Lingjaerde et al. in 1987. There are 4 domains of side effects included the psychological side effects, neurological side effects, autonomic side effects and the miscellaneous. Each item in every domain

is rated on 0-3 point continuum. Psychometric properties of the scale have high Cronbach's alpha.

WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCHEDULE-II (WHODAS-II)

To assess the disability of an individual irrespective of the disease or disorder WHO developed an instrument WHODAS-II (2000).It is based on the information regarding the past 30 days. Domains included are

- ➢ Understanding and communicating,

- ➢ Involvement in society

- ➢ Socialization and mobility,

- ➢ Life activities

- ➢ Relationship with others,

- ➢ Self care,

In this study the short version of the schedule has been used. Scoring is done in the continuum of 1-5. Superior score indicates that there is more disability. The internal consistency and reliability scores for the instrument were high. The factor loading for the short version was found to be at least 0.7 in each domain.

SOCIAL SUPPORT QUESTIONNAIRE (SSQ)

The social support scale used is the one developed by Pollack and Harris, 1998.It measures the perceived social support. The 27 item scale has included

o   Information related to support, assistance, concern, disapproval or reinforcement that an individual receives from working colleagues, one's family, friends and social acquaintances.

o   If the scores are higher it indicates that the social support is higher.

The psychometric properties for this scale are very satisfactory .

It is designed to be of use where perceived social support is needed as dependant or independent factor.

PROCEDURE

❖   The information regarding the study and the procedure were given to each patient and control 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 duration of the disease, family history of disease, duration of treatment, number of hospitalization were collected from the patients using the schedule.

- ❖ WHOQOL-BREF scale was administered to both patients and individuals without mental illness to assess their quality of life.

- ❖ Positive and negative syndrome scale (PANSS) was administered to evaluate the symptoms in the patients with schizophrenia.

- ❖ Calgary depressive rating scale was administered to evaluate the presence of depression in the patients.

- ❖ Beck cognitive insight scale was administered to evaluate insight about illness.

- ❖ WHODAS-II was administered to evaluate disability due to the illness

- ❖ UKU side effects scale was administered to evaluate unwanted effects of antipsychotics.

- ❖ Social support questionnaire for perceived social support was administered to 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 sociodemographic details were analyzed using the descriptive statistics.

➢ Analysis using simple frequencies ,means, standard deviations and test of significance like 't' test and ANOVA, Descriptive statistics and tests of correlation, multivariate analysis using **SPSS software-20** was performed with the data collected.

RESULTS

A. Sample characteristics

1. Age and sex distribution

Most of the patients with schizophrenia in the study group were in the age group 36-45 years. (Table.2). There were more females than males (Table 2).

2. Marital Status

There were 23 married subjects and 21 subjects who were never married.6 subjects were separated or widowed.

3. Socio economic status

82% of the subjects in study group belonged to the low socioeconomic status.

4. Education

38% of the subjects had no formal education,30% had below high school,12% had high school and 8% had higher secondary education. None of the subjects were graduates.

5. Occupation

82% of the subjects were unemployed and only 18% had employment.

B. Disease characteristics in the study group

1. Duration of illness

Of the 50 subjects, 25 had the illness in the range 5 to 10 years which accounts for 50%.36 percent of the subjects had illness for less than 5 years and 14% had the illness for more than 10 years.

Duration of illness
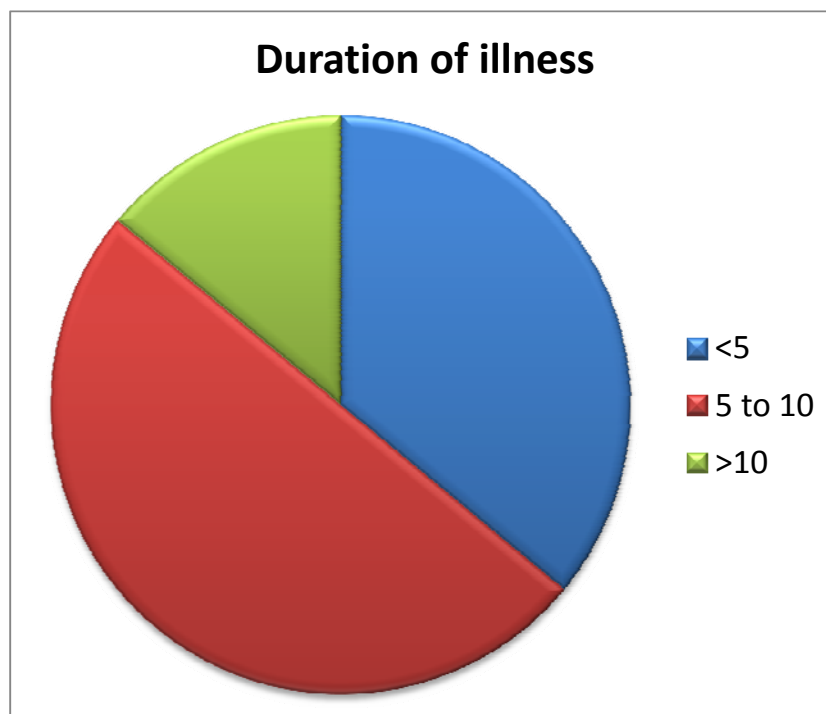
2. Family history

50% of the subjects had family history.

3. Phase of the illness

For 28% of the subjects this was the first episode of the illness. Among the rest who were in subsequent episodes 17% of the

subjects were in active phase, 30% were in remission and 8% were in relapse phase of the illness which is illustrated as follows.

Phase of illness
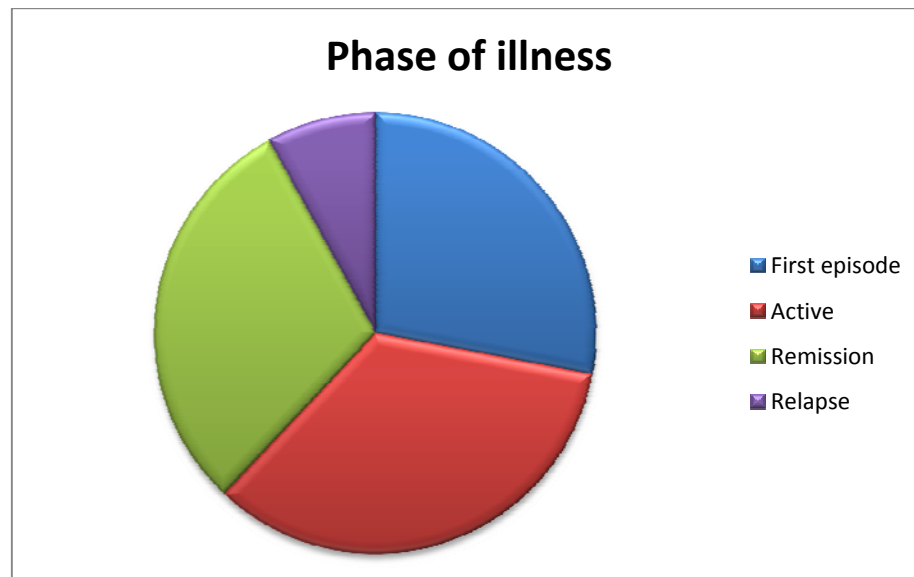
4. **Duration of treatment and number of hospitalizations**

68% of subjects have had treatment for less than 5 years and 32% for more than 5 years. 39 subjects had less than 5 hospitalizations and 11 of them had more than 5.

5. **Subtype of schizophrenia**

37 (74%) subjects had paranoid subtype, 2(4%) had catatonic, 1(2%) was hebephrenic and 10 (20%) had other type of schizophrenia

Table 2-Distribution of socio demographic profile of study and control group

Variable	Schizophrenia N=50,f %	Control N=50,f%
Age in years		
18-25	10 (20)	13(26)
26-35	13 (26)	17(34)
36-45	27 (54)	20(40)
Sex		
Male	23 (46)	20(40)
Female	27 (54)	30(60)
Marital status		
Never married	21 (42)	23(46)
Married	23 (46)	22(44)
Separated/widowed	6 (12)	5(10)
Education		
No education	19 (38)	11(22)
Below high school	15 (30)	11(22)
High school	12 (24)	16(32)
Higher secondary	4 (8)	12(24)
Occupation		
Unemployed	41 (82)	23(46)
Employed	9 (18)	27(54)
Socio economic status		
Low	41 (82)	35(70)
Middle	9 (18)	15(30)
Religion		
Hindu	39 (78)	31(62)
Christian	9 (18)	15(30)
Muslim	2 (4)	3(6)

Age Distribution

Legend: 18-25, 26-35, 36-45

Sex distribution

Legend: male, female

Education

Legend: higher secondary, high school, below high school, no education
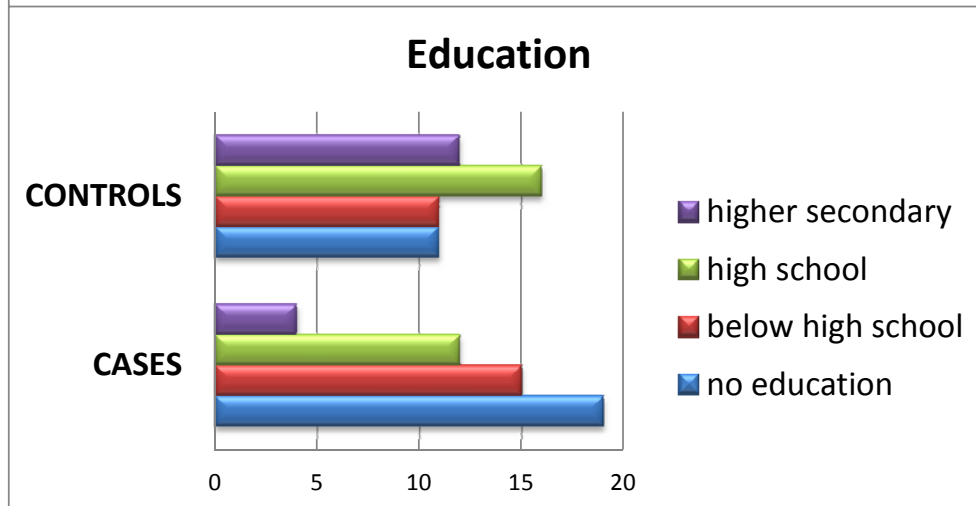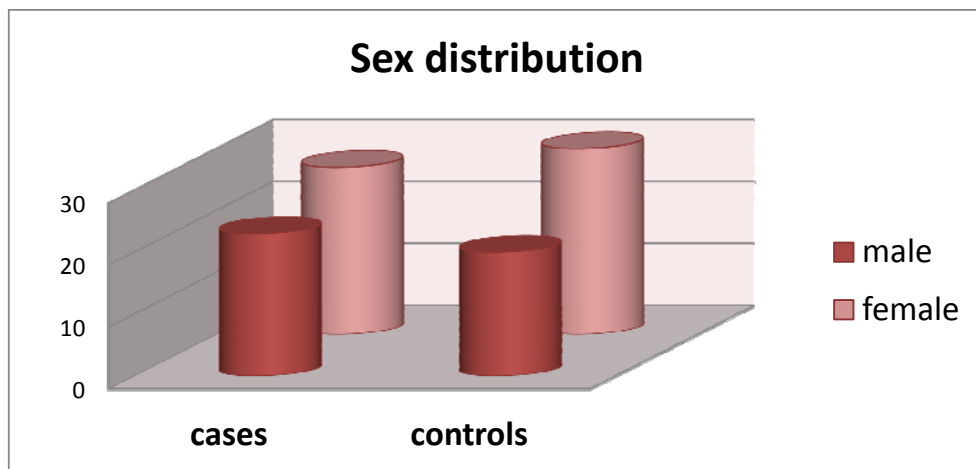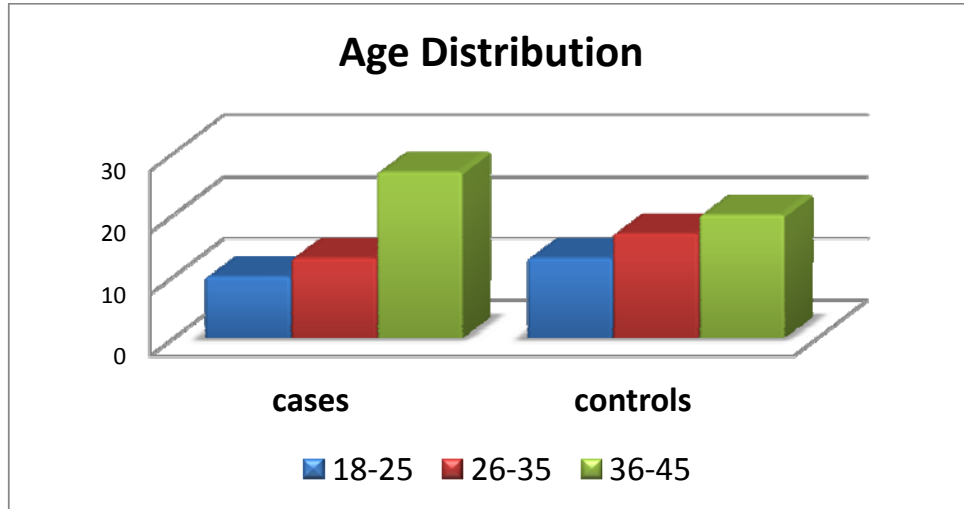
Table 3 Distribution of clinical profile of study population

Variable	Schizophrenia N=50,f %
Duration of illness –in years	
< 5	18 (36)
5 - 10	25 (50)
>10	7 (14)
Phase of illness	
First episode	14 (28)
Active	17 (34)
Remission	15 (30)
Relapse	4 (8)
Family history in years	
yes	25 (50)
no	25 (50)
Duration of treatment in years	
<5	34 (68)
>5	16 (32)
Number of hospitalizations	
<5	39 (78)
>5	11 (22)
Subtype of schizophrenia	
Paranoid	37 (74)
Catatonic	2 (4)
Hebephrenic	1 (2)
Others	10 (20)

GROUP CHARACTERISTICS OF THE QUALITY OF LIFE OF STUDY AND CONTROL GROUP

Table 4-Mean Of The Qol Domains Among Cases And Controls

		N	Mean	Std. Deviation	Std. Error Mean
QUESTION 1	cases	50	2.94	.890	.126
	controls	50	3.88	.627	.089
QUESTION 2	cases	50	2.78	1.055	.149
	controls	50	3.90	.931	.132
PHYSICAL DOMAIN	cases	50	38.4998	17.86859	2.52700
	controls	50	67.2140	10.91163	1.54314
PSYCHOLOGICAL DOMAIN	cases	50	41.6670	19.52573	2.76135
	controls	50	70.4160	12.32139	1.74251
SOCIAL DOMAIN	cases	50	28.4992	19.63999	2.77751
	controls	50	65.1660	15.76522	2.22954
ENVIRONMENTAL DOMAIN	cases	50	40.5648	18.11710	2.56215
	controls	50	68.1276	13.57019	1.91911

The study group statistics revealed a score of 2.94, 2.78 for the score of 5 for the questions 1 and 2 when compare to 3.88 and 3.90 for the same in control group. The mean score for the different domains of quality of life of the study group are 38.5, 41.7, 28.5, 40.56 for physical, psychological, social and environmental domains respectively. These are

found to be lower than the mean scores of control population with 67.2, 70.4, 65.1 and 68.1 respectively.

COMPARISON OF QUALITY OF LIFE
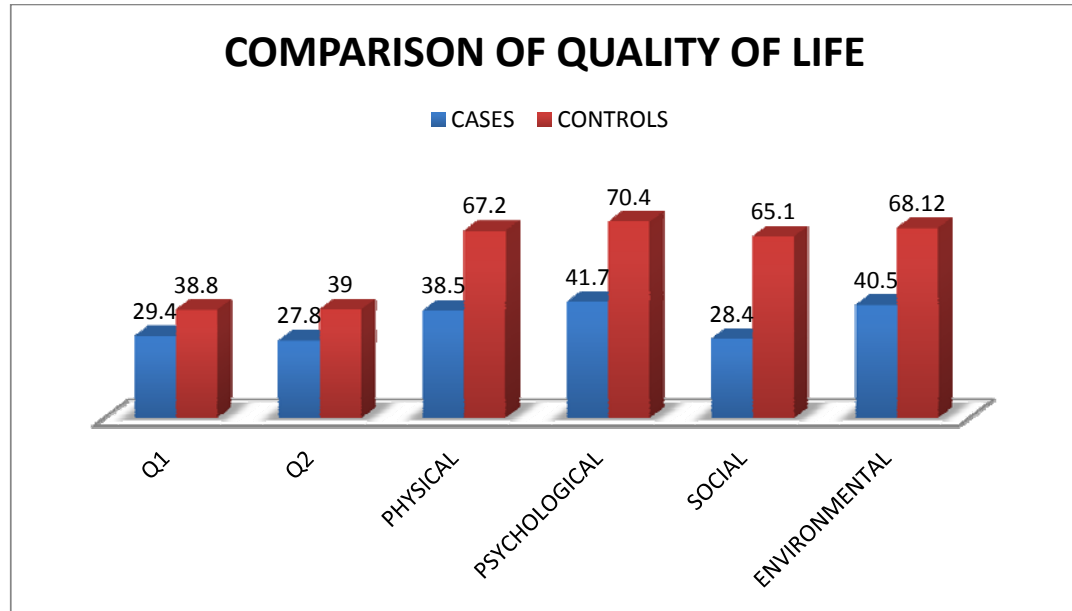
INDEPENDENT SAMPLES 'T' TEST FOR SIGNIFICANCE IN VARIATIONS BETWEEN THE GROUPS

The significance value in the Levene's test of variances is all greater than 0.05 which shows that the variability in the two groups is about the same except for physical and environmental domains. This means that variability in the two domains is not significant.

Table 5-Independent Samples Test-Variation between groups

Variables		Levene's Test		t-test for Equality of Means		
		F	Sig.	t	df	Sig.
Q1	Equal variances assumed	1.855	.176	-6.104	98	.000
Q2	Equal variances assumed	.775	.381	-5.626	98	.000
PHYS	Equal variances assumed	3.989	.049	-9.698	98	.000
PSYCH	Equal variances assumed	1.813	.181	-8.805	98	.000
SOCIAL	Equal variances assumed	.219	.641	-10.295	98	.000
ENVIR	Equal variances assumed	4.873	.030	-8.610	98	.000

The value of sig.(2 tailed) in the t test for equality of means is less than .05 for all domains .Because of this we can conclude that there is a statistically Significant difference between the means of different domains of quality of life for the study and the control group. Since the group statistics revealed that the mean for quality of life domains was greater than that of study group, we conclude that the subjects of study group had poorer quality of life in all 4 domains than the control group.

ROC-RECEIVER OPERATING CHARACTERISTICS PLOT

QUESTION1

Sensitivity: 80.0
Specificity: 74.0
Criterion : ≤3

(Y-axis: Sensitivity, X-axis: 100-Specificity)
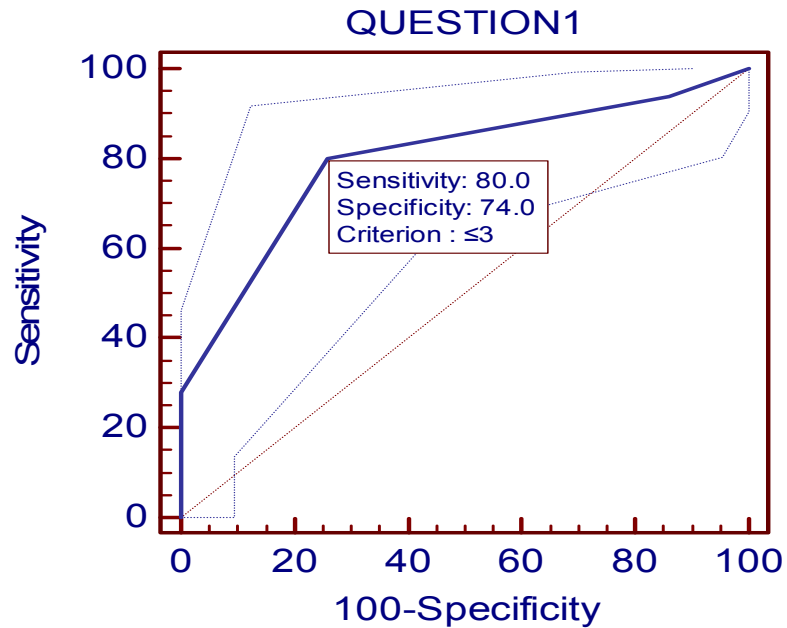
Table 6 ROC Curve-statistics

Variables	Area under curve	P value	Youden index	Cutoff value
Q1	0.798	<0.0001	0.54	3
Q2	0.781	<0.0001	0.54	3
physical	0.924	<0.0001	0.84	50
psychological	0.914	<0.0001	0.76	54
social	0.898	<0.0001	0.80	33.3
environmental	0.885	<0.0001	0.72	56.2

The receiver operating characteristics curves were created to find the ability of the different "quality of life" domains score in recognizing people with schizophrenia from those without. The table shows different results of the ROC plot for the different domains.

Accuracy is measured by the area under the ROC curve. An area of 1 represents a perfect test; an area of .5 represents a worthless test. The area under curve for all the test ranges from 0.781 to 0.924, which shows that all the domains have the ability to predict the patients with schizophrenia in our sample. Moreover the level of significance for the area under curve is found to be <0.0001, which means it is statistically significant. A rough guide for classifying the accuracy of a diagnostic test is the traditional academic point system:

- .90-1 = excellent
- .80-.90 = good
- .70-.80 = fair
- .60-.70 = poor
- .50-.60 = fail

Youden J index is used to summarise the performance of a test. Value ranges from 0-1. A value of '0' means that the test is not of any use. A value of '1' means test is perfect. In our sample the Youden value

is in the range of 0.70-0.85 which means the various domain scores has the ability to differentiate people with schizophrenia.

The cut off score for question one is 3, for question 2 is 3, for physical domain is 50, for psychological domain is 54, for social domain is 33.33, for environmental domain is 56.2. Hence it is concluded that the social domain score has greater specificity than other domains.

SOCIAL

Sensitivity: 86.0
Specificity: 94.0
Criterion : ≤33.33

Sensitivity (y-axis)

100-Specificity (x-axis)
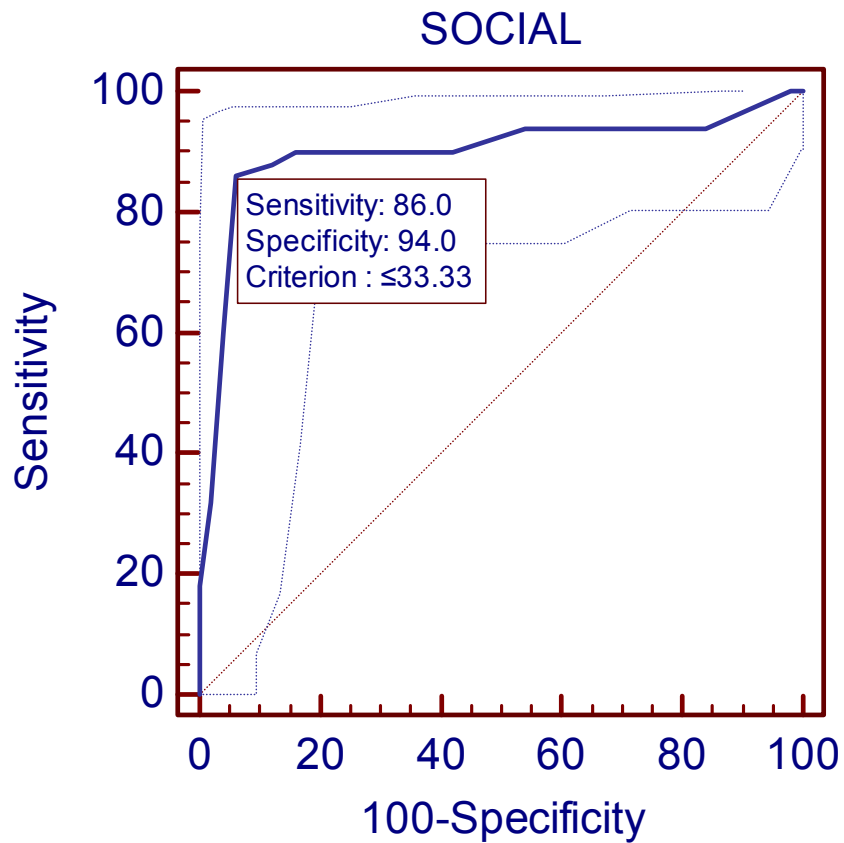
ANALYSIS OF AGE VERSUS QUALITY OF LIFE DOMAINS

Table 7-ANOVA-Age And Quality Of Life Domains

Variables	F value	Significance
Q1	1.173	.318
Q2	1.648	.203
PHYS	3.071	.056
PSYCH	6.069	.005
SOCIAL	2.388	.103
ENVIR	1.442	.247

Table 8-Means - quality of life age wise

	Mean		
	18-25	10	35.4167
PSYCH	26-35	13	56.4103
	36-45	27	36.8827

Table 9-Post Hoc Test Results Age And QoL

MULTIPLE COMPARISONS-LSD POST HOC TEST							
Dependent Variable	(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PSYCH-DOMAIN	26-35	18-25	20.99359[*]	7.47567	**.007**	5.9545	36.0327
		36-45	19.52754[*]	5.99977	**.002**	7.4576	31.5975

On performing analysis of variance between the different age groups and quality of life, the statistical result showed no variations among the age groups in the quality of life domains except the

psychological domain which showed significant difference among the groups. The age group between 26-35 showed greater variation when compared to age groups 18-25 and 36-45.

There was a statistically significant difference between groups in psychological domain as determined by one-way ANOVA $(F(2,27) = 6.069, p = .005)$. A LSD post-hoc test revealed that the psychological quality of life was statistically significantly higher in the age groups 26-35 when compared to age groups 18-25 and 36-45.

GENDER AND QUALITY OF LIFE

Table-10 GENDER –'t' test for equality of means

Variables	Levene's Test for Equality of Variances				
	F	Sig.	t	df	Sig. (2-tailed)
Q1	.101	.752	2.472	48	.017
Q2	2.442	.125	-.250	48	.803
PHYS	.051	.822	.967	48	.338
PSYCH	.782	.381	2.852	48	.006
SOCIAL	.390	.535	1.128	48	.265
ENVIR	3.211	.079	1.253	48	.216

The group descriptive statistics reveal that the male gender has higher mean values for all domains of quality of life. The p value of significance in the Levene's equality of variances is more than 0.05 for

all six domains. Thus there is no difference in variability in the two groups. In the 't' test for significance (2 tailed) of mean differences the domain Q1 has a p value of 0.017 and the psychological domain has a p value of 0.003, both of which are less than 0.05 which is statistically significant. *Because of this we conclude that the male gender has a higher overall quality of life and the psychological quality of life is also high in males.*

Table 11-**Means-Qol In Gender**

Variables	sex	N	Mean
Q1	male	23	3.26
	female	27	2.67
Q2	male	23	2.74
	female	27	2.81
PHYS	male	23	41.1491
	female	27	36.2434
PSYCH	male	23	49.6377
	female	27	34.8765
SOCIAL	male	23	31.8841
	female	27	25.6173
ENVIR	male	23	44.0217
	female	27	37.6157

SOCIO ECONOMIC STATUS AND QUALITY OF LIFE

Table 12 Means Qol In Socioeconomic Status

Variables	Socio economic status	N	Mean
Q1	low	41	2.78
	middle	9	3.67
Q2	low	41	2.66
	middle	9	3.33
PHYS	low	41	36.9338
	middle	9	45.6349
PSYCH	low	41	39.5325
	middle	9	51.3889
SOCIAL	low	41	22.1545
	middle	9	57.4074
ENVIR	low	41	37.3476
	middle	9	55.2083

Table 13- student t Test –Qol And Socio Economic Status

Variables		Levene's Test for Equality of Variances		T test for equality of means		
		F	Sig.	t	df	Sig. (2-tailed)
Q1	Equal variances assumed	4.727	.035	-2.902	48	.006
Q2	Equal variances assumed	2.593	.114	-1.775	48	.082
	Equal variances not assumed			-1.448	9.949	.178
PHYS	Equal variances assumed	7.426	.009	-1.333	48	.189
PSYCH	Equal variances assumed	57.160	.000	-1.680	48	.099
SOCIAL	Equal variances assumed	24.478	.000	-6.727	48	.000
ENVIR	Equal variances assumed	10.952	.002	-2.869	48	.006

In our study group there were no subjects from high socioeconomic status. From the descriptive statistics it is seen that the quality of life

domains have higher means in the middle socioeconomic group than in the low socioeconomic group. An analysis of how much socioeconomic status influences the quality of life in patients with schizophrenia was done, the Levene's test for equality of variances showed p values of >0.05 hence we conclude that there is no difference in variability in the groups. The significance (two tailed) in the t test was found to be less than 0.05 for the Q1, social domain and environmental domains .Thus we can conclude that patients with low socioeconomic status have poorer quality of life.

EDUCATION AND QUALITY OF LIFE DOMAINS

Table 14 **Means-Qol and Education**

Education	Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
No Education	2.79	2.53	29.6992	37.7193	25.4386	32.2368
Below High School	2.53	2.20	37.8571	35.5556	22.7778	38.5417
High School	3.17	3.33	41.9643	39.5833	27.7778	45.0521
Higher Secondary	4.50	4.50	72.3214	89.5833	66.6667	74.2188
Total	2.94	2.78	38.5000	41.6667	28.5000	40.5625

Table 15-ANOVA-Education and Quality of life domains

Variables	F value	significance
Q1	7.957	.000
Q2	10.179	.000
PHYS	10.058	.000
PSYCH	18.019	.000
SOCIAL	8.041	.000
ENVIR	9.496	.000

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On performing Analysis Of Variance between the different education levels and quality of life, the statistical result showed statistically significant variations among all the different education levels. There was a statistically significant difference between groups in all domains as determined by one-way ANOVA. A LSD post-hoc test revealed that the group with higher secondary education had higher quality of life when compared to other groups which were statistically significant with all p values <0.05 for all domains.

Table 16-Education and Quality of Life Domains-Post Hoc

LSD-post hoc comparison			Mean difference	significance
Q1	Higher secondary	No education	1.711[*]	.000
		Below high school	1.967[*]	.000
		High school	1.333[*]	.003
Q2	Higher secondary	No education	1.974[*]	.000
		Below high school	2.300[*]	.000
		High school	1.167[*]	.021
PHYS	Higher secondary	No education	42.62218[*]	.000
		Below high school	34.46429[*]	.000
		High school	30.35714[*]	.001
PSYCH	Higher secondary	No education	51.86404[*]	.000
		Below high school	54.02778[*]	.000
		High school	50.00000[*]	.000
SOCIAL	Higher secondary	No education	41.22807[*]	.000
		Below high school	43.88889[*]	.000
		High school	38.88889[*]	.000
ENVIR	Higher secondary	No education	41.98191[*]	.000
		Below high school	35.67708[*]	.000
		High school	29.16667[*]	.001

EMPLOYMENT AND QUALITY OF LIFE

Table 17-**Means –Quality Of Life And Employment**

Variables	Occupation	N	Mean
Q1	Unemployed	41	2.83
	Employed	9	3.44
Q2	Unemployed	41	2.61
	Employed	9	3.56
PHYS	Unemployed	41	35.6272
	Employed	9	51.5873
PSYCH	Unemployed	41	38.3130
	Employed	9	56.9444
SOCIAL	Unemployed	41	23.1707
	Employed	9	52.7778
ENVIR	Unemployed	41	38.1098
	Employed	9	51.7361

Table 18-Individual Samples't' Test -Employment

	Levene's Test for Equality of Variances				
	F	Sig.	t	df	Sig. (2-tailed)
Q1	5.883	.019	-1.929	48	.060
Q2	2.278	.138	-2.570	48	.013
PHYS	3.578	.065	-2.560	48	.014
PSYCH	28.597	.000	-2.762	48	.008
SOCIAL	18.422	.000	-4.998	48	.000
ENVIR	10.819	.002	-2.114	48	.040

There is significant difference between the means between the groups which are employed and not employed. The 'p' value for all domains was found to be less than .05 that is difference in means is

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statistically significant. From the descriptive statistics we found that the mean scores of the group that is employed are higher than that of those who are unemployed. Thus, we conclude that the quality of life is higher in patients who are employed.

Thus, we conclude that the quality of life is higher in patients who are employed than the unemployed.

MARITAL STATUS AND QUALITY OF LIFE

Table 19-**Mean-Qol And Marital Status**

Marital status	Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
Never married	3.05	2.76	43.0272	46.6270	28.9683	44.0476
Married	3.00	3.00	35.4037	42.2101	27.5362	40.6250
Separated/widowed	2.33	2.00	34.5238	22.2222	30.5556	28.1250
Total	2.94	2.78	38.5000	41.6667	28.5000	40.5625

Table 20-

ANOVA –Marital status and QUALITY OF LIFE psychological domain						
		Sum of Squares	df	Mean Square	F	Sig.
PSYCH	Between Groups	2792.012	2	1396.006	4.130	.022
	Within Groups	15888.544	47	338.054		
	Total	18680.556	49			

Table 21-Marital Status-Post Hoc Comparison

Dependent Variable	(I) marital status	(J) marital status	Mean Difference (I-J)	significance
PSYCH-domain	Widowed/separated	never married	-24.40476*	.006
		married	-19.98792*	.022

On comparing the mean scores of various QUALITY OF LIFE domains for groups with different marital status, the group which is widowed/separated has the lowest scores. On performing analysis of variance significant difference was found only with the psychological domain, which was confirmed by the post hoc test. Thus we can conclude that the group which was divorced or widowed had a lower quality of life especially the psychological domain which was statistically significant.

DURATION OF ILLNESS AND QUALITY OF LIFE

Table 22-**Mean-Qol And Duration Of Illness**

Duration Of Illness	Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
<5 yrs	3.22	3.06	45.2381	48.1481	35.6481	46.1806
5-10 yrs	2.68	2.60	36.4286	39.1667	19.6667	37.1250
>10 yrs	3.14	2.71	28.5714	33.9286	41.6667	38.3929

Table 23-Anova- Qol And Duration Of Illness

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Variables						
Q1	Between Groups	3.412	2	1.706	2.264	.115
	Within Groups	35.408	47	.753		
Q2	Between Groups	2.207	2	1.103	.990	.379
	Within Groups	52.373	47	1.114		
PHYS	Between Groups	1614.541	2	807.270	2.704	.077
	Within Groups	14030.612	47	298.524		
PSYCH	Between Groups	1331.570	2	665.785	1.804	.176
	Within Groups	17348.986	47	369.127		
SOCIAL	Between Groups	4083.951	2	2041.975	6.477	.003
	Within Groups	14817.438	47	315.265		
ENVIR	Between Groups	896.487	2	448.244	1.387	.260
	Within Groups	15187.302	47	323.134		

Table 24-Post Hoc –Duration of Illness

Dependent Variable	(I) duration of illness	(J) duration of illness	Mean Difference (I-J)	Std. Error	Sig.
SOCIAL	5-10 yrs	<5 yrs	-15.98148[*]	5.48865	.005
		>10 yrs	-22.00000[*]	7.59265	.006

On comparing the means of the domains of Quality of life the group with less than 5 years of illness has better quality of life .On the ANOVA the social domain has the significant difference in quality of life .On performing post hoc test the group with 5 to 10 years duration of illness has been found to have lower quality of life.

PHASE OF ILLNESS AND QUALITY OF LIFE

Table 25-**Mean- Phase Of Illness And Quality Of Life**

Phase of illness	Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
First episode	3.14	3.00	43.3673	52.9762	39.2857	51.5625
Active illness	2.82	2.71	36.3445	33.3333	23.0392	30.5147
Remission	3.07	2.87	39.2857	44.7222	26.1111	45.6250
Relapse	2.25	2.00	27.6786	26.0417	22.9167	25.7813
Total	2.94	2.78	38.5000	41.6667	28.5000	40.5625

Table 26-ANOVA Phase Of Illness And Quality Of Life

Variables		Sum of Squares	df	Mean Square	F	Sig.
Q1	Between Groups	2.952	3	.984	1.262	.299
	Within Groups	35.868	46	.780		
Q2	Between Groups	3.317	3	1.106	.992	.405
	Within Groups	51.263	46	1.114		
PHYS	Between Groups	888.331	3	296.110	.923	.437
	Within Groups	14756.822	46	320.800		
PSYCH	Between Groups	4087.839	3	1362.613	4.295	.009
	Within Groups	14592.717	46	317.233		
SOCIAL	Between Groups	2345.882	3	781.961	2.173	.104
	Within Groups	16555.507	46	359.902		
ENVIR	Between Groups	4668.664	3	1556.221	6.271	.001
	Within Groups	11415.125	46	248.155		

CHART DEPICTING PHASE OF ILLNESS AND QUALITY OF LIFE
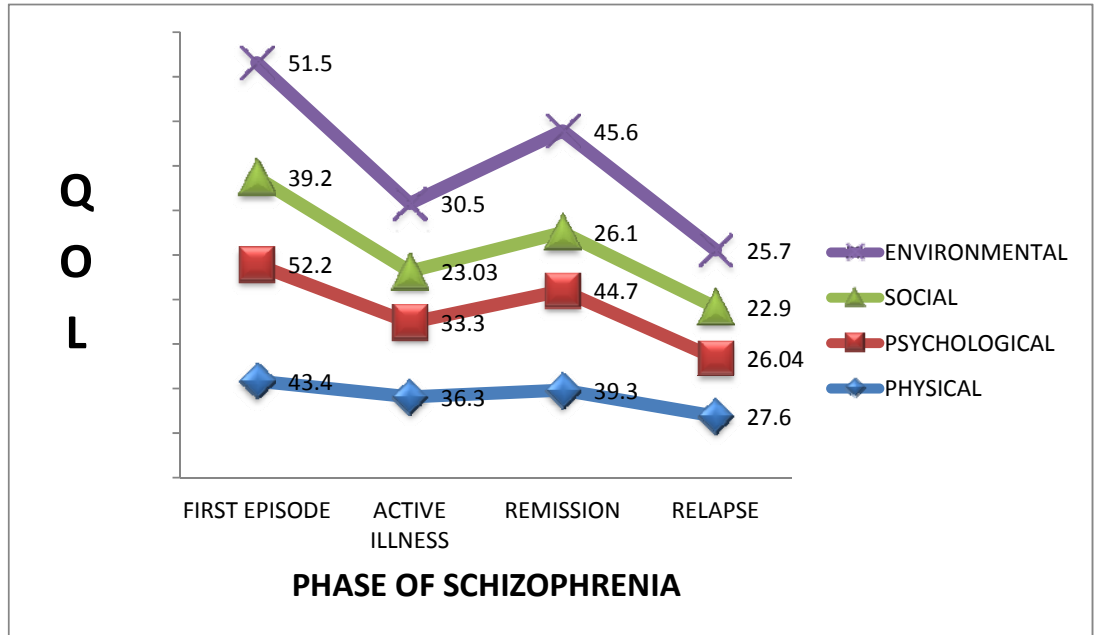
Table 27-POST HOC TEST- Phase of Illness and Quality of Life

Dependent Variable	(I) phase of illness	(j) phase of illness	Mean Difference (I-J)	Sig.
PSYCH	First episode	Relapse	26.93452[*]	.011
		First episode	-19.64286[*]	.004
ENVIR	First episode	Active illness	21.04779[*]	.001
		Relapse	25.78125[*]	.006
	Active illness	First episode	-21.04779[*]	.001
		Remission	-15.11029[*]	.009
SOCIAL	First episode	Active illness	16.24650[*]	.022

Although in the descriptive table the mean score are lower for the group in the relapse it was not found to be statistically significant. There was statistical difference between the groups only in the psychological, environmental and social domains.

Table 28-Means- Family History And Quality Of Life

	family h/o	N	Mean
Q1	yes	25	3.20
	no	25	2.68
Q2	yes	25	3.00
	no	25	2.56
PHYS	yes	25	33.8571
	no	25	43.1429
PSYCH	yes	25	43.6667
	no	25	39.6667
SOCIAL	yes	25	30.0000
	no	25	27.0000
ENVIR	yes	25	44.2500
	no	25	36.8750

Table 29-t test- Family History And Quality Of Life

Variables	Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)
	F	Sig.			
Q1	10.815	.002	2.140	48	.057
Q2	.566	.455	1.492	48	.142
PHYS	5.475	.023	-1.885	48	.066
PSYCH	4.434	.040	.721	48	.475
SOCIAL	2.556	.116	.536	48	.594
ENVIR	1.085	.303	1.456	48	.152

Although the means for the domains between the groups were higher for those with family history there was no significant difference found on using 't' test.

QUALITY OF LIFE AND PSYCHOPATHOLOGICAL SYMPTOMS

Table 30-Descriptive Statistics- Psychopathological Symptoms

Variables	Mean	Std. Deviation	N
Positive symptoms	15.9600	9.31963	50
Negative symptoms	12.6600	10.80931	50
General psychopathology	29.0200	19.84788	50

Table 31-Pearson correlation-QoL and psychopathology

Variables		Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
Positive symptoms	Pearson Correlation	.374**	.202	.178	.265	.248	.178
	Sig. (2-tailed)	.008	.159	.215	.062	.083	.217
Negative symptoms	Pearson Correlation	-.036	-.300*	-.253	-.379**	-.066	-.354*
	Sig. (2-tailed)	.803	.034	.076	.007	.647	.012
General Psycho pathological symptoms	Pearson Correlation	.239	.059	-.026	-.093	.177	-.047
	Sig. (2-tailed)	.094	.686	.859	.522	.220	.745

There is a significant negative correlation between negative symptoms and psychological domain of quality of life (Pearson 'r'=-0.379, p=0.007), environmental domain(Pearson r = -.354, p=.012) and the Question 2 (Pearson r = -0.300,p=.034. there is significant positive correlation between positive symptoms and overall quality of life. There was no significant correlation found between general psychopathological symptoms and quality of life

QUALITY OF LIFE AND DEPRESSION

Table 32-Correlation-Qol And Depression

Variables		C1	C2	C3	C4	C5	C6	C7	C8	C9	CDSS total
Q1	Pearson Correlation	-.447**	-.485**	-.300*	-.238	-.116	-.328*	-.428**	-.469**	-.466**	-.558**
	Sig. (2-tailed)	.001	.000	.035	.096	.424	.020	.002	.001	.001	.000
Q2	Pearson Correlation	-.389**	-.451**	-.095	-.188	.142	-.223	-.349*	-.558**	-.166	-.399**
	Sig. (2-tailed)	.005	.001	.513	.192	.324	.119	.013	.000	.249	.004
PHYS	Pearson Correlation	-.246	-.206	-.064	-.126	-.056	-.072	-.140	.046	-.179	-.183
	Sig. (2-tailed)	.085	.152	.660	.382	.698	.619	.334	.752	.214	.203
PSYCH	Pearson Correlation	-.593**	-.336*	-.217	-.291*	-.161	-.555**	-.548**	-.422**	-.500**	-.614**
	Sig. (2-tailed)	.000	.017	.131	.041	.264	.000	.000	.002	.000	.000
SOCIAL	Pearson Correlation	-.008	-.127	-.081	.064	-.091	.102	.023	-.222	-.028	-.057
	Sig. (2-tailed)	.959	.381	.576	.657	.529	.480	.876	.121	.847	.694
ENVIR	Pearson Correlation	-.357*	-.006	-.124	-.177	.015	-.243	-.362**	-.177	-.192	-.276
	Sig. (2-tailed)	.011	.965	.390	.219	.919	.089	.010	.220	.182	.052

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

There is significant negative correlation between most of the 9 items of Calgary depression scale with the overall perceived Quality of life, psychological domain and some of the items of health and

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environmental domain. The maximum negative correlation is found between total depression score and question 1 of the WHOQOL BREF.

QUALITY OF LIFE AND COGNITIVE INSIGHT

Table 33-Correlation Between Quality Of Life And Cognitive Insight

Variables		Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
Self reflectiveness	Pearson Correlation	.446[**]	.511[**]	.115	.304[*]	.515[**]	.371[**]
	Sig. (2-tailed)	.001	.000	.428	.032	.000	.008
	N	50	50	50	50	50	50
Self certainty	Pearson Correlation	.467[**]	.523[**]	.330[*]	.367[**]	.694[**]	.450[**]
	Sig. (2-tailed)	.001	.000	.019	.009	.000	.001
	N	50	50	50	50	50	50
Insight	Pearson Correlation	-.043	-.056	-.350[*]	-.084	-.313[*]	-.099
	Sig. (2-tailed)	.769	.701	.013	.560	.027	.495
	N	50	50	50	50	50	50

A strong positive correlation was found between self reflectiveness scores and various domains of quality of life. There was also statistical significant positive correlation between self certainty and quality of life. Pearson correlation also showed a strong negative statistically significant correlation between the cognitive insight and quality of life. The maximum negative correlation was found between the physical domain and insight, next comes the social domain.

QUALITY OF LIFE AND DISABILITY SCORE

Table 34-Correlation-Quality of Life and Disability

Variables		Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
Who Disability score	Pearson Correlation	-.205	-.479[**]	-.153	-.527[**]	-.246	-.496[**]
	Sig. (2-tailed)	.153	.000	.289	.000	.085	.000

Pearson correlation analysis between the WHO disability score and the various domains of quality of life showed a very strong negative correlation between them. Maximum was found in the health and the environment domain.

QUALITY OF LIFE AND SIDE EFFECTS

Table 35-Correlation-Quality Of Life And Antipsychotic side effect

Variables		Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
UKU	Pearson Correlation	-.129	-.137	-.480[**]	-.423[**]	-.436[**]	-.403[**]
	Sig. (2-tailed)	.374	.343	.000	.002	.002	.004
	N	50	50	50	50	50	50

There was statistically significant negative correlation between the total side effects score and quality of life. Maximum negative correlation was found with physical, psychological, social and environmental domain of quality of life.

QUALITY OF LIFE AND PERCEIVED SOCIAL SUPPORT

Table 36-Correlation-Quality of Life And perceived social support

	Variables	Q1	Q2	PHYS	PSYCH	SOCIAL	ENVIR
SSQ	Pearson Correlation	.211	.256	.034	.145	-.121	.204
	Sig. (2-tailed)	.141	.073	.817	.316	.403	.156
	N	50	50	50	50	50	50

There was no significant correlation found between the perceived social support and perceived quality of life in this study.

MULTIPLE REGRESSION ANALYSIS

Table 37-FOR dependant variable Q1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.100	1.107		2.801	.009
	age	-.292	.214	-.262	-1.362	.183
	sex	-.539	.296	-.305	-1.823	.078
	religion	.327	.207	.194	1.582	.124
	Socio economic status	.600	.348	.262	1.725	.094
	education	.232	.178	.255	1.300	.203
	occupation	.061	.384	.027	.159	.875
	marital status	.147	.180	.112	.816	.421
	duration of illness	.176	.256	.134	.688	.497
	phase of illness	.245	.215	.259	1.139	.264
	duration of rx	-.304	.372	-.161	-.817	.420
	schi subtype	.001	.140	.002	.009	.993
	bcis	.069	.081	.120	.852	.401
	whodas	-.043	.027	-.366	-1.569	.027
	positive	-.007	.021	-.068	-.304	.763
	negative	.002	.036	.023	.053	.958
	generalpsycho	.013	.020	.285	.652	.519
	CDSStotal	-.094	.026	-.514	-3.581	.001
	UKUtotalscore	.008	.018	.075	.424	.675

a. Dependent Variable: Q1

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The multiple regression model for Overall quality Q1domain with all predictors, produced $R^2 = .853$, $F (18, 31) = 4.610$, $p < .001$. As can be seen in Table1, the factors whodas score, Cdss score had significant negative regression weights, indicating subjects with higher scores on these scales were expected to have lower quality of life, after controlling for the other variables in the model. Other factors did not significantly contribute to the multiple regression model.

Table 38- Multiple Regression For The Variable Psychological Domain

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	89.572	15.226		5.883	.000
	age	2.803	2.949	.115	.951	.349
	sex	-15.008	4.071	-.387	-3.687	.001
	religion	-2.369	2.842	-.064	-.834	.411
	Socio economic status	9.677	4.787	.192	2.021	.052
	education	.517	2.455	.026	.211	.835
	occupation	4.964	5.282	.099	.940	.355
	marital status	-.606	2.473	-.021	-.245	.808
	duration of illness	-4.599	3.516	-.160	-1.308	.201
	phase of illness	1.144	2.960	.055	.386	.702
	duration of rx	-6.233	5.123	-.150	-1.217	.233
	schi subtype	-2.082	1.925	-.130	-1.081	.288
	bcis	3.397	1.108	.271	3.067	.074
	whodas	-.740	.375	-.288	-1.971	.002
	positive	.540	.296	.258	1.827	.077
	negative	-.556	.490	-.308	-1.135	.265
	generalpsycho	.217	.270	.220	.803	.428
	CDSStotal	-1.249	.362	-.311	-3.454	.002
	UKUtotalscore	-.757	.245	-.342	-3.096	.004

The multiple regression model for psychological domain with all predictors produced R² = .893, F(18, 31) = 14.379, p < .001. As can be seen in Table1, the factors sex, socioeconomic status, whodas score, Cdss score and UKU side effects score had significant negative regression weights, indicating subjects with higher scores on these scales were expected to have lower quality of life , after controlling for the other variables in the model. Other factors did not significantly contribute to the multiple regression model.In other Multiple regression analysis for other domains the factors Cdss score and disability scores had significant weightage.

DISCUSSION

The primary and overall purpose of this study is to analyze the determinants of perceived quality of life in patients with schizophrenia and compare the same to general population. The quality of life of people without mental illness was also studied and they were found to be age matched , sex matched as well as socioeconomically and educationally matched with the study population.

Majority of the subjects of the study population belonged predominantly to the third to fourth decade group i.e. **36-45 years** age group in which 54% of them were females. So the gender distribution is slightly more among females. The analysis of marital status revealed that 23 subjects out of the 50 were married.

On further evaluating educational status it was found that 38% had no formal education and only 8% had higher secondary education. None of them were graduates. Only 18% of the subjects with schizophrenia were employed. A vast majority i.e 82% of the study population belonged to the low socioeconomic background. Similarly a vast majority i.e 82% was unemployed. Um employment played an important role in Quality of Life .Only 18 % among our subjects were employed and this marked a significant effect on their quality of life.

Analysis of the data related to illness revealed that half of the study subjects had the illness for duration of 5 to 10 years and 30% of them were in remission phase. 50% of the subjects gave a family history of the illness. 68% of them had treatment for less than 5 years.74% had Paranoid subtype of schizophrenia. It was observed that the remissions over a period of years worsened the quality of life.

Comparing Quality Of Life Of Individuals With Schizophrenia And Individuals Free Of Mental Illness (No Mental illness)

The scores, for all four domains of quality of life were examined in both the study and control group. The mean score of the four domains and the score of the question 1 (which assess the overall quality of life) and the question 2 (which assess the overall health perception) were found to be higher in the control group, the group without schizophrenia. On analysis of the same using independent samples with't' test there was significant difference in the scores for all domains as illustrated in table 4. This indicates that the quality of life perceived by the patients with schizophrenia was lower than the general population. This is in accordance with various studies done worldwide.

Studies were conducted by Lehman et al. 1982, Gupta et al. 1998, Bengtsson-Tops & Hansson 1999, Ponizovsky et al. 2003, Bobes &

Carcia-Portilla 2006, Evans et al. 2007 All these studies confirm the result of our study.

The ROC -receiver operating characteristics curves were created to find the ability of the different "quality of life" domains score .This was   useful   for recognizing and differentiating people with schizophrenia from those without schizophrenia ROC curves showed that the social domain score has the highest ability to predict the presence of the illness, though other domains also had high area under curve and Youden index. Thus the quality of life can be used as a tool in screening for the illness in an outpatient setup. The cut off score for question one is 3, for question 2 is 3, for physical domain is 50, for psychological domain is 54, for social domain is 33.33, for environmental domain is 56.2.

SOCIO-DEMOGRAPHIC CHARACTERISTICS AND QUALITY OF LIFE

Age and quality of life

Analysis of the effect of age on quality of life was carried out using the analysis of variance. Our study showed that there was significantly lower quality of life in age groups 18-25 and 36-45 when compared to the 26-35 age groups in the psychological domain. This

can be explained by the fact the subjects in this age group could possibly have been(1) married ,(2)completed their education and (3) settled financially when compare to their younger group. Their health and their ability and energy should be high when compared to the group which is older than them.

Gender And Quality Of Life

On performing the Levene's test for equality of variances the results showed that there was no variability of quality of life scores within the group of males and also within females.

Further in the individual samples't' test there was significant higher scores in overall quality of life and psychological domains in males. This is consistent with the studies done by Xiang et al in China, Narvez et al in United States, and Duno et al in Spain.

This lower quality of life in women in our study population can be attributed to the discriminating social norms and gender inequalities that have a negative effect on wellbeing of females in our population setup.

Socioeconomic Status And Quality Of Life

82 percent of our study population belonged to the low socio economic background. There were very few from the high

socioeconomic background. In our analysis of the effect of socio economic status it was found that there was significantly lower quality of life in individuals belonging to low socio economic status when compared to middle. The significant difference was found mainly in the social, environmental domains. The overall quality of life was also low in low socio economic group. Possible explanations for the low quality of life are

- The lack of proper lodging,

- lack of basic amenities and

- the lack of privacy

Studies by Hansson et al and Salokangas et al all showed that quality of life was lower in low socio economic background. In our study group, there were very few subjects from high socioeconomic status because the study was carried out in a public hospital predominatly serving the low and middle socioeconomic group. Among the middle and low socioeconomic group, the descriptive statistics of our study reveal it is that the quality of life domains have higher means in the middle socioeconomic group than in the low socioeconomic group. So this made it necessary to analyse the significance of socio economic status. Hence an analysis of the impact level i.e. how much socioeconomic status influences the quality

of life in patients with schizophrenia was done utilising *the Levene's test.*

Levene's test for equality of variances showed p values of >0.05 hence we conclude that there is no difference in variability in the groups. The significance (two tailed) in the t test was found to be less than 0.05 for the Q1, social domain and environmental domains .Thus we can conclude that patients with low socioeconomic status have poorer quality of life.

Education And Quality Of Life Domains

The role of education in quality of life assumes significance because the low socioeconomic group and the middle income group had varied level of education. So ANOVA-Analysis Of Variance was performed between the different education levels and quality of life, taking into consideration that the levels vary in different groups and vary among different individuals. The statistical evaluation was methodically employed and the result showed statistically significant variations among all the different education levels. There was a statistically significant difference between groups in all domains as determined by one-way ANOVA .

A LSD post-hoc test was also carried out which revealed that the group with higher secondary education had higher quality of life when compared to other groups which were statistically significant with all p values <0.05 for all domains This is illustrated in TABLE 16

Thus education impacts the quality of life and the higher levels of education improves the quality of life.

Employment and Quality of Life

Employment offers financial security and in general stabilizes the standard of living. More over employment boosts the confidence level of the individual and improves social participation leading to social acceptance and empathy .Lack of employment in turn leads to social apathy. The statistical analysis reveals a significant difference between the means between the groups which are employed and not employed. All domains were studied and The 'p' value for all domains was found to be less than .05 which highlights the fact that difference in means is statistically significant.

From the descriptive statistics we compared the employed and the unemployed and found that the that the mean scores of the group that is employed are higher than that of those who are unemployed. This is well illustrated in tables 17 and 18 . *Thus we conclude that*

the patients who are employed had a better quality of life. Employment empowers the individual with financial freedom and gives them social security. They have better self esteem and thus a sense of wellbeing. Cardoso et al study showed that patients without job perceived quality of life low. Bryson, Lysaker, and Bell examined the connections between paid work and quality of life measures in a specimen of 97 outpatients with schizophrenia or schizoaffective disorders through the utilization of the QLS and QoLI in the United States of America.

The study revealed that paid work enhanced the quality of life for individuals with schizophrenia. In a Nigerian study, Adewuya and Makanjuola showed that poor quality of life was connected with unemployment and poor social backing.

In a Hong Kong study led by Chan and Yu found that unemployed members were less fulfilled by their quality of life than others.

Marital Status and Quality of Life

In accordance with various studies our study showed that there was statistically significant difference among patients who were married and those who were single or separated. The patients who were separated from their spouse or widowed had lower quality of life

especially in the psychological domain which was confirmed by analyzing with ANOVA and post hoc tests. Cardoso et al study demonstrated that patients who had a companion performed well on the scores of quality of life. A study by Salokangas et al. in Finland showed that women who were married had a better quality of life than men. Patients, who had a good personal relationship suffered less abandonment, had secure feeling and a sense of attachment.Marital bonding and emotional security impacts QUALITY OF LIFE.

Duration of Illness and Quality of Life

On comparing the mean scores of various domains among the three groups of different duration of illness the group with less than 5 years duration has greater means. But on analysis with ANOVA and post hoc only the social domain showed significant difference among groups and the group with 5-10 yrs duration has lower quality of life. Increased duration of illness makes the individual function less physically, occupationally and socially.

Their work life which is significantly affected does not support them financially over the years. Moreover if the disease progress and the duration increase their wellbeing worsens. The caregiver's supports also deteriorate and diminish over the period of years. The longer the

disease .i.e. prolonged progression of the disease will lead to diminished quality of life

Phase Of Illness And Quality Of Life

Data analysis with ANOVA between phase of schizophrenia and quality of life domains reveal that patients in their first episode perceived better quality of life than others. The quality of life declines thereafter during further episodes though there might be betterment during periods of remissions. Of the four domains, the domains that are mainly affected are the psychological and environmental domain.(Ref table 7 and 9.)   Docherty et al found that patients who had symptom remission had better subjective quality of life.

Family History and Quality Of Life

There was no significant difference between the groups with and without family history of the illness.

Quality of Life and Psychopathological Symptoms

From the study statistics it has become evident that there exists **a negative correlation** between the quality of life and negative symptoms like slowness in thinking and activities and lack of emotions.

The domains that are crucially affected are the psychological and the environmental domain. The negative symptoms have a serious impact on functioning and the utility of health services is reduced by these symptoms. The motivation for treatment and the realization of well being is low in patients with negative symptoms.

A study by Heinrich carpenter et al 1984 showed that schizophrenia deficit syndrome posed a greater decline in the quality of life.

In our study it is also evident that patients with higher positive symptoms score can perceive their quality of life to be better. However the general psychopathology does not influence the quality of life.

Depression and Quality of Life

The Pearson product moment 'r' showed a very significant negative correlation between all items of the Calgary depression scale and also the total depression score. Because of this we conclude *that the presence of depressive symptoms in the patients with schizophrenia is associated with very low perceived quality of life*. Several cross sectional and longitudinal studies have confirmed this correlation. The presence of affective symptoms and anxiety symptoms greatly influence quality of life as per a study conducted by Priebe et al.

Multivariate regression analysis was carried out in our study where it is evident that for every unit increase in depression score there is 1.9 units decrease in psychological quality of life. The reason for the low quality of life can be attributed to the loss of interest in activities and loss of pleasure. There is also a pessimistic attitude towards life. The patients rate their wellbeing to be low, as they have a decreased self-esteem. In the regression analysis carried out for other domains, it is evident that depression scores gained huge significance. Hence *depression can be considered to have a definitive impact on the quality of life of patients with schizophrenia when compared to other determinants.* Thus thwarting the depressive symptoms in patients with schizophrenia can improve quality of life and thereby can refine the treatment outcome. Jonathan D Huppert in his study found that severe depression was the only factor which determined the quality of life in patients with schizophrenia.

Cognitive insight and quality of life

The cognitive insight by and large is accepted as the difference between the self reflectiveness and self certainty. The scores of self reflectiveness, self certainty and the insight were compared with the quality of life domains. On the Pearson correlation analysis there *was significant positive correlation between the self reflectiveness and self*

certainty but a *significant strong negative correlation between insight and quality of life.*

Thus from the above mentioned study we can conclude that if there is greater insight there is decreased quality of life. Insight into the illness decreases the self-esteem of the individual and thus he perceives his quality of life to be low.

Disability And Quality Of Life

There was a strong negative correlation between the disability scores and the domain score of quality of life which was analyzed by the Pearson correlation analysis. The correlations were statistically significant with a 'p' value of less than .001 in psychological and environmental domain.

In the regression analysis it was estimated that for every unit increase in disability score there is 1.4 and 1.003 increase in the psychological and environmental domains respectively. The disability in day to day activities will put the individual under stress and hence the psychological domain declines. *Disability is yet another factor which scored significant scores in multiple regression analysis.* Hence it becomes imperative to prevent the disability due to schizophrenia before it annihilates the quality of life in these patients.

Side effects and quality of life

There was a significant negative correlation estimated between the total score for side effects and the quality of life domains. This shows that if there are a lot of side effects due to medications in patients with schizophrenia, there is a decrease in quality of life. *The increase in side effects causes an increase in disability and decrease in functionality and thereby a affecting the wellbeing of the individua*l. **Statistics showed that all the domains of quality of life decrease when there are increased side effects**. Lewis et al studied the side effects of first and second generation antipsychotics and their influence on the quality of life. The people on SGA were found to have a better quality of life.

Social Support And Quality Of Life

In our study there was no significant correlation found between the quality of life domains and perceived social support. The subjects in our study perceived to have very minimal social support either they had none or less than five members which resulted in very low scores in all of the subjects. Thus there was no significant statistical result in this correlation. An in-depth study in a larger population is required for this assessment.

SUMMARY AND CONCLUSION

This study was done to study the quality of life in patients with schizophrenia. The subjects were recruited from the patients attending institute of mental health. The quality of life was scored under four domains. This was compared with that of the people without mental illness.

The results showed that quality of life in patients with schizophrenia was lower than people without mental illness. The WHOQOL_BREF questionnaire can be used as a tool to suspect the presence of the illness. Female gender, widowed or divorced individuals, those with lower education and without employment had lower quality of life when compared to their counterparts. Longer the duration of illness lesser the quality of life. Patients in their first episode psychosis perceive their quality of life better than those in their subsequent episodes. In this study it was found that family history had no implication on the quality of life.

The study showed that more there were negative and depressive symptoms the quality of life was perceived to be low by patients. If there is insight there is low quality of life. Presence of disability also lowers the perceived quality of life in patients. When there are increased side effects due to antipsychotics there is lower perceived quality of life.

LIMITATIONS OF THE STUDY

Study design limitations

➢ This is a cross sectional study where data regarding quality of life in patients was obtained at a single point of time. But quality of life is a dynamic construct that changes from time to time 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.

➢ The statistical correlation had been brought out where ever the sample size yielded significance.

➢ IMH patients with Schizophrenia 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 IMH caters to this subset of patients in general.

RECOMMENDATIONS

❖ Quality of life is a dynamic construct .Hence a longitudinal study design is recommended.

❖ The study can be done in multiple centers including private hospital setup for broader inclusion and varied outcome .

❖ Study involving larger sample size can further determine the factors that affect quality of life in patients with schizophrenia.

❖ Depression should be evaluated and treated as a priority since it is the most significant factor affecting quality of life in schizophrenia

❖ Emphasis should be laid in disability prevention in schizophrenia

❖ Quality Of Life is a higher order construct and is multifactorial. When recovery and rehabilitation is planned it should be emphasized to include quality of life as an outcome variable.

❖ This study revealed that women have lesser quality of life than men .Women that were divorced or widowed as a subset had lesser quality of life. hence gender and marital status should be earmarked as significant factors for future studies.

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APPENDIX 1

INFORMATION SHEET

- We are conducting a study on quality of life among patients attending Institute of mental health, Madras medical college, Chennai and for that your participation may be valuable to us.

- The purpose of this study is to assess the quality of life and its determinants in schizophrenic patients easily with the help of certain special scales.

- The privacy of the patients in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

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

- The results of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment.

APPENDIX 2

Informed consent form

Title of the study - **A Study on Quality of life in patients with schizophrenia**

Name of the participant: _____

Name of the Principal/Co-Investigator: SUBASHINI.S

Name of the Institution: MADRAS MEDICAL COLLEGE, CHENNAI

I, _____, have read the information in this form (or it has been read to me). I was free to ask any questions and they have been answered. I am over 18 years of age and, exercising my free power of choice, hereby give my consent to be included as a participant in the study titled **A Study on Quality of life in patients with schizophrenia**

 (1)   I have read and understood this consent form and the information provided to me.

(2)   I have had the consent document explained to me.

(3)   I have been explained about the nature of the study.

(4)   I have been explained about my rights and responsibilities by the investigator.

(5)   I have informed the investigator of all the treatments I am taking or have taken in the past months/ years including any native (alternative) treatments.

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

(7)   I agree to cooperate with the investigator and I will inform him/her immediately if I suffer unusual symptoms.

(10)   I am aware of the fact that I can opt out of the study at any time without having to give any reason and this will not affect my future treatment in the hospital.

(11)   I am also aware that the investigators may terminate my participation in the study at any time, for any reason, without my consent.

(12)   I hereby give permission to the investigators to release the information obtained from me as result of participation in this study to the sponsors, regulatory authorities, Government agencies, and ethics committee. I understand that they may inspect my original records.

(13)   I understand that my identity will be kept confidential if my data are publicly presented.

(14)   I have had my questions answered to my satisfaction.

(15)   I consent voluntarily to participate as a participant in the research study.

I am aware, that if I have any questions during this study, I should contact the investigators. By signing this consent from, I attest that the information given in this document has been clearly explained to me and understood by me. I will be given a copy of this consent document.

For adult participants

Name and signature / thumb impression of the participant (or legal representative if participant incompetent):

(Name) _____(Signature)_____ _____ Date: _____

Name and signature of the Investigator or his representative obtaining consent:

(Name)   _____   (Signature)_____

(Date)_____

APPENDIX 3

SOCIO DEMOGRAPHIC DATA

s.no.   Name

Age of subject

1. 18-25,
2. 26-35
3. 36-45

Sex

1. Male 2. Female

Religion

1. Hindu 2. Christian 3. Muslim 4. others

Socioeconomic status

1. Low
2. middle
3. high

Education

1. illiterate
2. below high school
3. high school
4. graduate
5. postgraduate

Occupation

1. Unemployed
2. employed
   a. farmer
   b. service(govern/private firms)
   c. own business

Marital status

1. never married
2. married
3. separated
4. widowed

5. DISEASE-RELATED CHARACTERISTICS –

- **Duration of illness**

    1. <5yrs
    2. 5-10 yrs
    3. >10yrs

- **Phase of illness**

    1. First episode

    2. Active

    3. Remission

    4. Relapse

- **Family history**

    1. Yes
    2. No

- **Duration of treatment**

    1. <5yrs

    2. >5yrs

- **Number of hospitalization**

    1. <5

    2. >5

- **Subtype of schizophrenia**

    1. Paranoid

    2. Catatonic

    3. Hebephrenic

    4. others

APPENDIX 4

QUALITY OF LIFE questionnaire

This questionnaire asks how you feel about your quality of life, health, or other areas of your life

	very poor	poor	not good not bad	good	Very good
1. How would you rate your quality of life?	1	2	3	4	5
	Not at all	little	moderate	Very much	extreme
1. How satisfied are you with your health?	1	2	3	4	5
2. To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
3. How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
4. Do you have enough energy for everyday life?	1	2	3	4	5
5. How well are you able to get around?	1	2	3	4	5
6. How satisfied are you with your sleep?	1	2	3	4	5
7. How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
8. How satisfied are you with your capacity for work?	1	2	3	4	5
9. How much do you enjoy life?	1	2	3	4	5
10. To what extent do you feel your life to be meaningful?	1	2	3	4	5
11. How well are you able to concentrate?	1	2	3	4	5
13. How satisfied are you with yourself?	1	2	3	4	5
14. How often do you have negative feelings such as blue mood, despair,	1	2	3	4	5

anxiety, depression?					
15.How satisfied are you with your personal relationships?	1	2	3	4	5
16.How satisfied are you with your sex life?	1	2	3	4	5
17.How satisfied are with the support you get from your friends?	1	2	3	4	5
18.How safe do you feel in your daily life?	1	2	3	4	5
19.How healthy is your physical environment?	1	2	3	4	5
20.Have you enough money to meet your needs?	1	2	3	4	5
21.How available to you is the information that you need in your daily-to-day life?	1	2	3	4	5
22.To what extent do you have the opportunity for leisure activities?	1	2	3	4	5
23.How satisfied are you with the condition of your living place?	1	2	3	4	5
24.How satisfied are you with your access to health services?	1	2	3	4	5
25.How satisfied are you with your transport?	1	2	3	4	5
26.Are you able to accept your bodily appearance?	1	2	3	4	5

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

APPENDIX 6

CALGRAYDEPRESSION SCALE

	Absent	Mild	Moderate	Severe
DEPRESSION	0	1	2	3
HOPELESSNESS	0	1	2	3
SELF DEPRECIATION	0	1	2	3
GUILTY IDEAS OF REFERENCE	0	1	2	3
PATHOLOGICAL GUILT	0	1	2	3
MORNING DEPRESSION	0	1	2	3
EARLY WAKENING	0	1	2	3
SUICIDE	0	1	2	3
OBSERVED DEPRESSION	0	1	2	3

Appendix 7 – Beck Cognitive Insight Scale

Self-reflectiveness

1. At times I have misunderstood other people's attitudes towards me
3. Other people may be more objective about the cause of my unpleasant experiences than I am.
4. I have jumped to conclusions too fast.
5. Some of my experiences that seemed very real may have been due to my imagination.
6. Some of the ideas that I was certain were true turned out to be false.
8. Even though I feel strongly that I was right I could be wrong.
12. If somebody points out that my beliefs are wrong I am willing to consider it.
14. There is often more than one possible explanation for why people act the way they do
15. My unusual experiences may be due to me being extremely upset or stressed.

Self-certainty

2. My interpretations of my experiences are definitively right.
7. If something feels right, it means that it is right.
9. I know better than anyone else what my problems are
10. When people disagree with me, they are generally wrong.
11. I cannot trust other people's opinion about my experiences.
13. I can trust my own judgment at all times.

Do not agree at all	Agree slightly	Agree a lot	Agree completely

(0 = do not agree at all to 3 = agree completely)

APPENDIX 8

WHODAS

H1	How do you rate your <u>overall health in the past 30 days</u>?	Very good	Good	Moderate	Bad	Very Bad

In the last 30 days <u>how much difficulty did you have in</u>:

		None	Mild	Moderate	Severe	Extreme /Cannot Do
S1	<u>Standing</u> for <u>long periods</u> such as <u>30 minutes</u>?	1	2	3	4	5
S2	Taking care of your <u>household responsibilities</u>?	1	2	3	4	5
S3	<u>Learning</u> a <u>new task</u>, for example, learning how to get to a new place?	1	2	3	4	5
S4	How much of a problem did you have <u>joining in community activities</u> (for example, festivities, religious or other activities) in the same way as anyone else can?	1	2	3	4	5
S5	How much have <u>you</u> been <u>emotionally affected</u> by your health problems?	1	2	3	4	5

In the last 30 days how much difficulty did you have in:		None	Mild	Moderate	Severe	Extreme /Cannot Do
S6	Concentrating on doing something for ten minutes?	1	2	3	4	5
S7	Walking a long distance such as a kilometre [or equivalent]?	1	2	3	4	5
S8	Washing your whole body?	1	2	3	4	5
S9	Getting dressed?	1	2	3	4	5
S10	Dealing with people you do not know?	1	2	3	4	5
S11	Maintaining a friendship?	1	2	3	4	5
S12	Your day to day work?	1	2	3	4	5

APPENDIX 9

UKU SIDE EFFECTS SCALE

Psychic									
Category of side effects	**Symptom**	**Not Ass.**	**Degree last 3 days (see manual)**				**Causal realationsship**		
		9	0	1	2	3	Imp	Pos	Prb
1.1	Concentration Difficulties	☐	☐	☐	☐	☐	☐	☐	☐
1.2	Astheniat/Lassitude/Increased Fatigability	☐	☐	☐	☐	☐	☐	☐	☐
1.3	Sleepiness/Sedation	☐	☐	☐	☐	☐	☐	☐	☐
1.4	Failing Memory	☐	☐	☐	☐	☐	☐	☐	☐
1.5	Depression	☐	☐	☐	☐	☐	☐	☐	☐
1.6	Tension/Inner Unrest	☐	☐	☐	☐	☐	☐	☐	☐
1.7	Increased Duration of Sleep	☐	☐	☐	☐	☐	☐	☐	☐
1.8	Reduced Duration of Sleep	☐	☐	☐	☐	☐	☐	☐	☐
1.9	Increased Dream Activity	☐	☐	☐	☐	☐	☐	☐	☐
1.10	Emotional indifference	☐	☐	☐	☐	☐	☐	☐	☐

Neurologic									
Category of side effects	**Symptom**	**Not Ass.**	**Degree last 3 days (see manual)**				**Causal realationsship**		
		9	0	1	2	3	Imp	Pos	Prb
2.1	Dystonia	☐	☐	☐	☐	☐	☐	☐	☐
2.2	Rigidity	☐	☐	☐	☐	☐	☐	☐	☐
2.3	Hypokinesia/Akinesia	☐	☐	☐	☐	☐	☐	☐	☐
2.4	Hyperkinesia logic	☐	☐	☐	☐	☐	☐	☐	☐
2.5	Tremor	☐	☐	☐	☐	☐	☐	☐	☐
2.6	Akathisia	☐	☐	☐	☐	☐	☐	☐	☐
2.7	Epileptic Seizures	☐	☐	☐	☐	☐	☐	☐	☐
2.8	Paraesthesias	☐	☐	☐	☐	☐	☐	☐	☐

Autonomic

Category of side effects	Symptom	Not Ass.	Degree last 3 days (see manual)				Causal realationsship		
		9	0	1	2	3	Imp	Pos	Prb
3.1	Accommodation Disturbances	☐	☐	☐	☐	☐	☐	☐	☐
3.2	Increased Salivation	☐	☐	☐	☐	☐	☐	☐	☐
3.3	Reduced Salivation	☐	☐	☐	☐	☐	☐	☐	☐
3.4	Nausea/Vomiting	☐	☐	☐	☐	☐	☐	☐	☐
3.5	Diarrhoea	☐	☐	☐	☐	☐	☐	☐	☐
3.6	Constipation	☐	☐	☐	☐	☐	☐	☐	☐
3.7	Micturition Disturbances	☐	☐	☐	☐	☐	☐	☐	☐
3.8	Polyuria/Polydipsia	☐	☐	☐	☐	☐	☐	☐	☐
3.9	Orthostatic Dizziness	☐	☐	☐	☐	☐	☐	☐	☐
3.10	Palpitations/Tachycardia	☐	☐	☐	☐	☐	☐	☐	☐
3.11	Increased Tendency to Sweating	☐	☐	☐	☐	☐	☐	☐	☐

Other-continued

Category of side effects	Symptom	Not Ass.	Degree last 3 days (see manual)				Causal realationsship		
		9	0	1	2	3	Imp	Pos	Prb
4.17	Headache	☐	☐						
4.17a	- Tension headache			☐	☐	☐	☐	☐	☐
4.17b	- Micraine			☐	☐	☐	☐	☐	☐
4.17c	- 0ther forms			☐	☐	☐	☐	☐	☐
4.18	Physical Dependence	☐	☐	☐	☐	☐	☐	☐	☐
4.19	Psfychic Dependence	☐	☐	☐	☐	☐	☐	☐	☐

14

Category of side effects	Symptom	Not Ass. 9	Degree last 3 days (see manual) 0	1	2	3	Causal realationsship Imp	Pos	Prb
Other									
4.1	Rash	☐	☐						
4.1a	- Morbilliform			☐	☐	☐	☐	☐	☐
4.1b	- Petechial			☐	☐	☐	☐	☐	☐
4.1c	- Urticarial			☐	☐	☐	☐	☐	☐
4.1d	- Psoriatic			☐	☐	☐	☐	☐	☐
4.1e	- Cannot be classified			☐	☐	☐	☐	☐	☐
4.2	Pruritus	☐	☐	☐	☐	☐	☐	☐	☐
4.3	Photosensitivity	☐	☐	☐	☐	☐	☐	☐	☐
4.4	Increased Pigmentation	☐	☐	☐	☐	☐	☐	☐	☐
4.5	Weight gain	☐	☐	☐	☐	☐	☐	☐	☐
4.6	Weight loss	☐	☐	☐	☐	☐	☐	☐	☐
4.7	Menorrhagia	☐	☐	☐	☐	☐	☐	☐	☐
4.8	Amenorrhoea	☐	☐	☐	☐	☐	☐	☐	☐
4.9	Galactorrhoea	☐	☐	☐	☐	☐	☐	☐	☐
4.10	Gynaecomastia	☐	☐	☐	☐	☐	☐	☐	☐
4.11	Increased Sexual Desire	☐	☐	☐	☐	☐	☐	☐	☐
4.12	Diminished Sexual Desire	☐	☐	☐	☐	☐	☐	☐	☐
4.13	Erectile Dysfunction	☐	☐	☐	☐	☐	☐	☐	☐
4.14	Ejaculatory Dysfunction	☐	☐	☐	☐	☐	☐	☐	☐
4.15	Orgastic Dysfunction	☐	☐	☐	☐	☐	☐	☐	☐
4.16	Dry Vagina	☐	☐	☐	☐	☐	☐	☐	☐

APPENDIX 10

SOCIAL SUPPORT QUESTIONNAIRE (SSQ)

1. Whom can you really count on to listen to you when you need to talk?

2. Whom could you really count on to help you if a person whom you thought was a good friend insulted you and told you that he/she didn't want to see you again?

3. Whose lives do you feel that you are an important part of?

4. Whom do you feel would help you if you were married and had just separated from your spouse?

5. Whom could you really count on to help you out in a crisis situation, even though they would have to go out of their way to do so?

6. Whom can you talk with frankly, without having to watch what you sa

7. Who helps you feel that you truly have something positive to contribute to others?

8. Whom can you really count on to distract you from your worries when you feel under stress

9. Whom can you really count on to be dependable when you need help?

10. Whom could you really count on to help you out if you had just been fired from your job or expelled from school

11. With whom can you totally be yourself?

12. Whom do you feel really appreciates you as a person

13. Whom can you really count on to give you useful suggestions that help you to avoid making mistakes?

14. Whom can you count on to listen openly and uncritically to your innermost feelings?

15. Who will comfort you when you need it by holding you in their arms?

16. Whom do you feel would help if a good friend of yours had been in a car accident and was hospitalized in serious condition?

17. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?

18. Whom do you fell would help if a family member very close to you died?

19. Who accepts you totally, including both your worst and your best points?

16

20. Whom can you really count on to care about you, regardless of what is happening to you?

21. Whom can you really count on to listen to you when you are very angry at someone else?

22. Whom can you really count on to tell you, in a thoughtful manner, when you need to improve in some way

23. Whom can you really count on to help you feel better when you are feeling generally down-in-thedumps?

24. Whom do you feel truly loves you deeply?

25. Whom can you count on to console you when you are very upset?

26. Whom can you really count on to support you in major decisions you make?

27. Whom can you really count on to help you feel better when you are very irritable, ready to get angry at almost anything?

ஆராய்ச்சி தகவல் மற்றும் ஒப்புதல் படிவம்

ஆராய்ச்சியாளர் பெயர் : **மரு. ச. சுபாஷினி**

பங்குகொள்பவரின் பெயர் :

இடம் : **அரசு மனநல காப்பகம்**, கீழ்ப்பாக்கம், சென்னை

ஆராய்ச்சியின் நோக்கம்

எங்கள் மருத்துவமணையில் நாங்கள் சிசோப்பரினியா (Schizophrenia) என்ற மனச்சிதைவு நோயாளிகளின் வாழ்க்கைத்தரம் பற்றிய ஆராய்ச்சி செய்யவுள்ளோம் அதில் அவர்கள் சமூக ஈடுபாடு, வேலை வாய்ப்பில் ஏற்படும் சிரமங்கள் மற்றும் அன்றாட வாழ்வில் ஏற்படும் சிரமங்களை சமாளிப்பதில் அவர்களுடைய திறன் ஆகியவற்றை விரிவாக ஆராய உள்ளோம். அதில் நீங்களும் பங்கேற்க விரும்புகிறோம்.

இதற்காக உங்களுக்கு 60 நிமிடங்கள் செலவாகும்.

இதில் நீங்கள் மனநல மருத்துவமனைக்கு (IMH) வரும்போது, சிறப்புப்பரிசோதனைகள் மற்றும் அளவீடுகள் மேற்கொள்ளப்படும்.

இதனால் தங்களது சிகிச்சை முறைக்கு எந்தவிதமான பாதிப்புகளும் ஏற்படாது என்றும், இதற்காக எந்த புதிய மருத்துகளும் தங்களுக்கு பரிசோதனை முறையில் வழங்கப்பட மாட்டாது என்றும் இதனால் உங்கள் உடல் / மனநிலைக்கு எந்த பின்விளைவுகளும் ஏற்படாது என்றும் உறுதியளிக்கிறோம்.

முடிவுகளை அல்லது கருத்துக்களை வெளியிடும்போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரயோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

இந்த ஆய்வின் முடிவுகள் ஆராய்ச்சியின்போது (அ) ஆராய்ச்சியின் முடிவின்போது தங்களுக்கு அறிவிக்கப்படும் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்த நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின்வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம். இதனால் தங்களுடைய சிகிச்சைக்கு எந்த பாதிப்பும் ஏற்படாது என்று உறுதி கூறுகிறோம்.

ஆராய்ச்சியாளர் கையொப்பம்   பங்கேற்பாளர் கையொப்பம் /

நாள் : _____   இடது கைரேகை

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age	sex	religion	Socio economic	education	occupation	marital status	duration of illness	phase of illness	family h/o	duration of rx	no.of hospitilisat	schi subtype	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	P1	P2	P3	P4	P5	P6	P7	N1	N2	N3	N4	N5
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N6	N7	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	C1	C2	C3	C4	C5	C6	C7	C8	C9	self reflectiveness	self certainty	bcis	whodas	SE1	SE2	SE3	SE4	SSQ
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