

**A STUDY OF RISK FACTORS FOR VIOLENCE
IN 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 OF RISK FACTORS FOR VIOLENCE IN
SCHIZOPHRENIA”** is the bonafide work of **Dr. DINESH
KUMAR. R**, 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 Jun 2015 – Aug 2015.

The Director,
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CERTIFICATE OF GUIDE

This is to certify that this dissertation titled, **“A STUDY OF RISK FACTORS FOR VIOLENCE IN SCHIZOPHRENIA”** is the original work of **Dr. DINESH KUMAR. R.** appearing for M.D. (Psychiatry) degree examination in April 2016, is an original bonafide record of work done in the year 2015 by him under my guidance and supervision in partial fulfilment of requirements of the Tamil Nadu Dr. M.G.R. Medical University, Chennai. I forward this to the Tamil Nadu Dr. M.G.R. Medical University, Chennai, Tamil Nadu, India.

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DECLARATION

I, **Dr. DINESH KUMAR. R.**, solemnly declare that the dissertation titled, “**A STUDY OF RISK FACTORS FOR VIOLENCE IN SCHIZOPHRENIA**” is a bonafide work done by me at the Madras Medical College, Chennai, during the period from Jun 2015 to Aug 2015 under the guidance and supervision of **Dr. KRISHNAN V.S., 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.

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INSTITUTIONAL ETHICS COMMITTEE
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CERTIFICATE OF APPROVAL

To
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Dear Dr. R.Dinesh Kumar,

The Institutional Ethics Committee has considered your request and approved your study titled **"A study of risk factors for violence in schizophrenia" No.21052015.**

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

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

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

Member Secretary, Ethics Committee

MEMBER SECRETARY,
INSTITUTIONAL ETHICS COMMITTEE
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CHENNAI-600 003

A STUDY OF RISK FACTORS FOR VIOLENCE IN SCHIZOPHRENIA

BY 201328007.MD (PSYCHIATRY) DINESH KUMAR.R

INTRODUCTION:

"While the individual man is an insoluble puzzle, in the aggregate he becomes a mathematical certainty. You can, for example never foretell what any man will do, but you can say with precision what an average number will be up to"- A. Conan Doyle.

Schizophrenia is the 'most puzzling' and also 'most debilitating' among all psychiatric conditions. In spite of many advances in neurosciences and clinical methodologies, we lack detailed knowledge about mechanisms and underlying causes. Still we cannot forget the distance we have covered, trying to understand schizophrenia from old ages to the present 21st Century. Initially affected individuals were labelled as seers and prophets and

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INTRODUCTION:

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Violence can be generally defined as physically and psychologically harmful aggression. The miniature form of violence namely

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INTRODUCTION

“While the individual man is an insoluble puzzle, in the aggregate he becomes a mathematical certainty. You can, for example never foretell what any man will do, but you can say with precision what an average number will be up to”- A. Conan Doyle.

Schizophrenia is the ‘most puzzling’ and also ‘most debilitating’ among all psychiatric conditions. In spite of many advances in neurosciences and clinical methodologies, we lack detailed knowledge about mechanisms and underlying causes. Still we cannot forget the distance we have covered, trying to understand schizophrenia from old ages to the present 21st Century. Initially affected individuals were labelled as seers and prophets and the treatment approaches were inhumane. Later they were separated from their families and grabbed away from their opportunities in the society by placing them in separate asylums (Institutionalisation) and chaining them throughout. In the early 19th century, unchaining was initiated by Philippe Pinel and treatment approach became humane from then on.

Violence can be generally defined as physically and psychologically harmful aggression. The miniature form of violence namely aggression has developed and passed on from species to species. While facing ecological challenges to help in thriving of species. CTP 9th edition

quotes that there are more than 250 definitions of aggression .Such is the diversity of the term that it includes anything from stare among children during playtime to that of a mammoth Nuclear war .There are various types, forms and causes for aggression . But violence is / was linked mostly with psychiatric illness from time immemorial. Among the psychiatric illnesses, most common one linked with is- schizophrenia.

As the humane approach in treatment of schizophrenia started , most advocated approach was de – institutionalisation of patients placed in asylum for long term.

As de-institutionalisation started from 1950' s , advocates against de – institutionalisation started pointing out violence as the reason . Though violent acts had been part and parcel of everyday life throughout world , media also played a role in pointing out violent acts by patients with schizophrenia within the community and blowed them out of proportion. This contributed towards the stigma against people with schizophrenia living in the community. Advocates for de – institutionalisation started pointing out that there are various other factors other than the disease per se that may constitute to violence as all patient with schizophrenia did not turn up violent . Questions started arising to search for those ‘other factors’. Questions posed where whether people already violent developed schizophrenia ? Or whether people who already developed

schizophrenia became violent. If people with schizophrenia became violent was it the disorder per se causing violence or socio – demographic factors like

1) age of onset and current age ; 2)educational status

3)occupational status; 4)socio economic status etc

of the patient that had a say in violence.

Even if the disorder is considered the cause there are many factors like

1) Duration of disorder ;

2) Duration of untreated illness

3) Compliance to treatment etc which may have a say on violence .

Other disorder factor is that each person having schizophrenia is unique in terms of his / her symptom profile which may have had role in most of violent acts.

Most people with schizophrenia are prone to use various substances. Tobacco being most common. But most acts of violence were attributed to people using Alcohol. Alcohol has been found to potentiate both offensive and defensive attacks in the form of avoiding dangerous situations.

There is another concept - victimisation which can be defined as process of being victimized like threatening with /corporeal damage / taking away property or basic needs or sexual harassment and misadventures.

De – institutionalisation ended up in risk of homelessness and victimisation .Victimisation has been found to be more common than violence according to many studies but much of the attention is thrown on violent act rather than victimisation .

With these many factors associated , various studies have been done to throw light on the various areas leading up to violence . But that has not been completely possible due to methodological challenges faced during research for example difficulties faced to measure violence- a broad concept . Variations have arisen depending upon source of information , sample not requesting all schizophrenics but not only those being arrested or hospitalised ;one of the other factors / prior history missed.

Hence definitive statements have not yet been made regarding violence in schizophrenia. Studies prior to 1980 suggested that schizophrenia patients were less violent. But then again studies started quoting in the direction of schizophrenics being violent .

In Indian setup not many published studies have been found looking for risk factors for violence in schizophrenia. But relatives and public have started asking us - the mental health professionals to predict about violence behaviour. There also rises the crucial question that how much percentage of violence in the community can be prevented by eliminating risk factors for violence. For this question to be answered, we need to conduct studies in this direction with implications for future.

“If men define situations as real they are real in their consequences”

-Thomas Theorem, W.I. Thomas

REVIEW OF LITERATURE

AGGRESSION AND VIOLENCE

Douglas et al, 2009 stated- “There is no simple way to define or measure violence.” The definition given by Moyer,1976: *Aggression* is “overt behavior involving intent to inflict noxious stimulation or to behave destructively toward another organism.” According to Volavka, 2002 *Violence* refers to “aggressive behavior among humans, thereby excluding aggressive behavior in animals or against objects.” The terms ‘aggression’ and ‘violence’ are used in different meanings in different studies.

Concerns for delivery of public health arise through aggression and its dangerous form violence. Both of them are not explainable by single factor as there are problems at various levels and multiple factors play a role. Those factors may be divided bio-psycho-socially into biologic factors; genetic factors, complications before and during birth, both foetal as well as rearing environment, psychiatric problems like alcohol or other substances, schizophrenia and other psychotic disorders, bipolar disorder, personality disorders (Citrome ; Volavka, 2003).

VIOLENCE IN MENTAL DISORDER- Wessely reported that 3% of violence is due to mentally ill persons. Study about ‘mentally abnormal

offenders' at Germany done by Häfner and Böker, 1973 summarised that "if we define the dangerousness of the mentally abnormal as the probability of their committing a violent crime, then our findings show that this does not exceed the dangerousness of the legally responsible adult population as a whole".

'The Baxstrom Studies (Cocozza & Steadman, 1974)' pointed that psychiatric services not able to predict violence. Tuinier ,1989 from Netherlands did field study on the 'relation between psychiatric syndrome and criminality'. Result- mental illness except for substance abuse has no relation with violence. Pattern of *decriminalization* continued in the 1990's.

Steadman et al.,1998 conducted the MacArthur Risk Assessment study. patients discharged from acute inpatient facilities were longitudinally followed up and compared with individuals from the community. There was no significant difference in the rate of violence by the discharged patients in comparison with the community.

Appelbaum, Robbins, and Monahan ,2000 looked for the link between delusions and violent behavior. There was no association between them. A meta-analysis was conducted by Bonta, Law, and Hanson,1998 - there was no difference in recidivism of violence between mentally ill and normal.

But other studies as follows suggested relation between violence and mental illness, the major one being schizophrenia. Taylor and Gunn , 1984 studied prison sample, and found that prevalence of major mental disorders in prison was high. 9% out of 1241 men showed symptoms of mental illness- major one being schizophrenia and mentioned it in the work “Motives for offending violent psychotic men” and concluded that important reason for offending in psychotic offenders are positive symptoms (e.g. delusions and hallucinations).

After that data from the MacArthur risk assessment study were reexamined. Recent reviews like Douglas et al 2009; Fazel et al 2009; Taylor, 2008 have started showing that there is co- relation between psychosis and violence. The meta-analysis by Douglas et al, 2009 supported that psychosis and violence are linked. Psychosis was found to have 49%-68% increased likelihood of violence

SCHIZOPHRENIA

Inconsistent results in previous studies due to confounding factors like gender, age, low social economic status, and comorbidity of substance use and/or antisocial personality. But studies using inpatients samples did show a relation (e.g. Cheung, Schweitzer, Crowley, & Tuckwell, 1997; Nolan et al., 2005). Inpatient violent behavior is found in high rates in psychiatric wards as per Daffern et al, 2002. Severe physical

violence may be rare- Nijman, Bowers, Oud, Jansen, 2005, staff members working with involuntary admitted patients experience a substantial amount of aggression. Results regarding violence in schizophrenia in inpatient samples may differ from results obtained from community based samples.

Recently published in 2015- Simeone et al. conducted systematic review of population-based studies that estimated prevalence across the globe. 65 studies done between 1990 to 2013 were reviewed ; out of which 29 belonged to Europe, 13 belonged to Asia, 10 belonged to North America, eight belonged to Africa, four belonged to Oceania; final one-multinational study. Due to methodological issues as well as geographical and even educational issues range of prevalence varied from region to region. 35 studies had study population of more than 50,000. median prevalence of schizophrenia- 0.33 % . The lifetime prevalence in 29 studies -0.48 %

VIOLENCE IN SCHIZOPHRENIA

Many studies had been done to answer the question on whether schizophrenia is the most common psychiatric illness leading to violence. But results were all non-uniform.

“No single variable explains violence in schizophrenia; rather, violent behavior occurs within a social-ecological system, involving a whole person with a particular life history and state health or disease, interacting with a particular social surround”- by Swanson et al. ,2006

Belfrage, 1998; Cote & Hodgins, 1992; Lindqvist & Allebeck, 1990 state-“ The relation between schizophrenia and violent crime is stronger than that between schizophrenia and non-violent crimes”

Hodgins,2008 reported increased risk of violence than the general population and the risk was found to be 4.6 times high for men and 23.2 times high for women. Ratio of crime due to violent acts different in each of the studies done. Most of the violent acts are assaults but homicide more than general population. Large et al 2009 pointed out increased risk of homicide due to schizophrenia.

Epidemiologic Catchment Area (ECA) Program (Robins & Regier, 1991) was done at five places in the United States during 1978 to 1985, 3000 to 5000 persons in each place. Diagnostic Interview Schedule (DIS) was the method applied according to the then DSM-III (Robbins et al; 1981) was used for psychiatric diagnoses. Two diagnostic interviews done in 12 months gap. Main aim was not for epidemiologic assessment of violent behavior but the data was used by SWANSON ET AL.,1990-

- Sample size of 10,000 respondents self-reported life-time acts of violence- hit/thrown/spanked/weapon use and
- Prevalence - 18%, 4% in prevalence during the one-year period prior to the interview.
- Violence in people without mental illness- 2.3%
- Violence in people with mental illness(schizophrenia and affective disorders)- 7% i.e 3 times more risk of violence

RECENT SWANSON ET AL, 2006

- To assess prevalence and risk factors of violence in schizophrenia patients (community study) and watch for the role of symptoms of psychotic nature- for acts leading upto minor as well as serious violence.
- Design- more than 1400 schizophrenia patients assessed clinically. Violent behavior in the past 6 months elicited by interview method. Data were obtained from patients who were included in CATIE trial done by NIMH.
- Sample- patients diagnosed as schizophrenia from 56 places in america.

- Main Outcome Measures- Violent acts were divided into 2 levels of severity:
 1. serious acts- injury due to assault with or without lethal weapon, threatening using a weapon of lethal nature or any type of sexual offence.
 2. minor violence- simple assault without injury or weapon use
- Results- Prevalence of violent acts over the 6-month period - 19.1%,out of which 3.6% of participants committed serious violent act. If “Positive” symptoms like persecutory ideas, prevalence of violence high, and if “negative” symptoms like social withdrawal, prevalence of violence low.
- Serious violence had following risk factors like 1.psychotic ,2.depressive symptoms, 3.conduct problems of childhood, and last but not the least victimisation.
- Minor violence was associated with presence of substance abuse pattern or dependence pattern; and also any difficulties in social functioning or interpersonally.
- Conclusions- Though risk of violence depends on the type of symptoms of patients there are various other risk factors other

than clinical profile of the patient which must be dealt within the community

Fazel et al,2009

- Systematic review studying relation between schizophrenia and other psychotic disorders with violence. It also compared substance abuse pattern with violent behavior.

Results

1. Among the men with schizophrenia and psychotic illness, odds ratio was 4.7; odds ratio became 3.8 when odds ratio was adjusted for various socio-demographic variables
2. Among the women with schizophrenia and psychotic illness, odds ratio was 8.2
3. Variation between studies were large and much of the variation was due to co-morbid substance abuse
4. Comparison of violence risk in various groups-

Subst abuse without psychosis= subst abuse with psychosis >> psychosis alone

5. Among homicides about 1 out of 300 schizophrenia committed murder which is similar to the general population.

Arsenault et al 2000 used questionnaire with 17 true or false type of questions to assess paranoia symptoms in a group of 961 new zealand adults. Other than substance dependence the disease factor that got directly related to violence was the paranoid type of cognitive personality style and along with that they also have difficulties in processing information.

Nestor et al (2014) studied the risk of violence in schizophrenia spectrum and related that there is a link between violence and paranoid type of cognitive personality style

In Austria edinger and monica et al,2014 studied 7222 inpatients for predominant violent behavior and violence was categorised by number of patients placed in locked units. Mechanical restraint was done much more in patients with organic mental illness, bipolar mania and personality disorders (predominantly cluster-B), than in patients with schizophrenia.

SOCIO-DEMOGRAPHIC RISK FACTORS IN VIOLENCE

Monahan and Steadman (1983) studied on relation between criminal behavior and mental illness. They pointed out that though the true rates of criminal act where found more in mentally ill, when treated rates where applied considering socio-demographic factors like age, sex,

social class and life history rates of criminal act directly due to mental illness reduced.

According to fazel et al in a sample of more than 13000 mean age of committing a violent crime was 28.5 years. Schaeffer & Ross et al studied violence in childhood onset schizophrenia i.e between 4 to 15 years of age in 81 subjects and found that 31% of the children had violent behavior. But diagnostic validity of schizophrenia and explainability of act of violence are difficult and hence not done in most of the studies.

Baillargeon et al, 2007 stated that differences in aggressive behavior begins as early as 17 months of age where male child is found to be 5 times more violent than female child. Keenan & shaw et al, 1997 stated that aggressive behavior in boys/ males could be due to the traditional sex type behaviors encouraged by parents and the society for example shyness in females and risk taking behavior in males is society driven and the viceversa is not encouraged.

Kjelsberg & Dahl,1999 did a long term follow-up study and findings of the study were- males(61%) had more criminal behavior compared to females(39%). Among the criminal behavior violent crimes in males= 51% whereas females=18%. When checking for persistence of violent acts females had adolescence limited activity whereas males had lifetime persistence of violence.

Gundrania, Neera,2014 studied regarding perception of a mentally ill mostly depression and schizophrenia vignette character read out to them. The study reported that when male mentally ill character was given as a sample vignette to report violence was perceived as a link. This study hence explains the conceptualization of general population with an image of a mentally ill person.

DISORDER RISK FACTORS AND TARGETS OF VIOLENCE

Research have shown that patients with psychosis and a violent past have more positive symptoms than patients without a violent past (Frésan et al., 2005). And, the more positive symptoms a patient has, the more likely it is that he will show aggressive behavior (Steinert, Wolfle, & Gebhardt, 2000)

Swartz et al,1998 studied relation between schizophrenia and effect of substance abuse and adherence to treatment. Those who were taking active treatment were found to be less violent.

Link et al, done in 1992, 1994,1998 studied regarding disease factor causing violence, targets of violence and timing of violent act. The more the presence of psychotic features, more was the violence reported. Among the psychotic features if paranoid features(mainly delusion of control or threat override) were excluded violent acts reduced to 39%

from 63%. The 3 specific features associated with violence were a. feel that others are hoping to harm, b. head is inserted with thoughts of others, c. mind influenced by uncontrolled forces

Targets of violent act depended upon the duration of illness. Family members were targets in a chronic illness; whereas strangers were involved in acute illness.

According to Nestor et al,1995 the more organized and chronic the delusional beliefs more the targets to be personal.

Walsh et al, 2004 did a study for prediction of violence and found out after 2 yrs follow-up that patients with previous history of violence, excessive alcohol use , recent criminal act were all pointers for future violence in schizophrenia patients

Yesavage et al,1983 studied regarding relation between violence, disorganized symptoms and thought processes involved in inpatients of schizophrenia and showed a link between them Whereas Palmstierna et al,1989 linked violence to be due to hostility rather than psychotic symptoms. Bjorkly, 2002 did 2 studies comparing effect of delusions and hallucinations over violence and linked their roles.

Amore et al 2008 studied regarding predictors of violence and in addition to the risk factors like male gender, substance use pattern and

positive symptoms- previous history of violence too had a fair role to play in risk of violence.

Junginger et al, 1998 stated that stressful family environment was found to be more linked with violence and also assess and focus more on individual symptoms of the psychotic disorder, such as delusions, than on broad diagnostic syndromes.

Quasi-experimental studies showed that persecutory ideations are related to aggressive behavior in both a clinical sample as well as the general population. These findings are similar to previous findings that delusions account for most of the violence in persons with a psychotic disorder (Swanson, Borum, & Swartz, 1996).

Patients with a psychotic disorder and a history of violence more often report having persecutory delusions than other delusions (Cheung et al, 1997). However, an explanation for the relation between persecutory ideations and aggression was still lacking. Previous studies found a relation between psychotic-like experiences and aggression in the general population (Kinoshita et al., 2011; Mojtabai, 2006).

Violent and homicidal behavior of psychotic individuals could be explained by a so called acting upon delusions or symptom consistent

violence (Buchanan et al., 1993; Junginger et al., 1998; Wessely et al., 1993).

According to Freeman et al. 2007 Persons with delusions have different strategies to cope with these delusions and related affect called as 'safety behaviors'. Although most patients will avoid threatening situations (in the case of persecutory ideations) some will cope with threat using aggression (Freeman et al, 2001; Wessely et al, 1993).

Bjorkly, 2002 compared with previous studies and found that emotional distress (including delusional distress) is higher in patients with persecutory delusions than in patients with other delusions. This landed up in hypothesis that distress due to delusion plays a role in aggression in patients with persecutory delusions. And even though the role of negative affectivity in this seems to be a logic one.

Hodgins, 2008 did typology of patients with schizophrenia into 3 types and proposed that violence in schizophrenia belong to heterogenous groups.

1. Early starters- they mostly had conduct and anti-social problems and violent acts prior to the onset of illness
2. Late starters- with no anti-social or conduct problems but violent acts after the onset of illness. Symptom profile doesn't change

much but are found to have delusions in theme of persecution and grandiosity.

3. First offenders- 'who commit first violent act in late thirties'. Though frequency is low severity of offence is high and homicidal mostly. Reason was quoted as "Deficient Affective Experiences" (Moran & Hodgins, 2004).

Nolan et al,2003 also classified inpatients with continuous violence into 3 types with one group having complete lack of remorse.

Bo, Kongerslev Abu-akel, Haahr, and Simonsen , 2011 concluded this division and pointed that 2 pathways occur in the lead to violence.

Violence decreases with age after adolescence as explained by Moffit, 1993 using graphical curve between age and crime but does not hold true for homicidal acts, which is found to be likely to have been committed by persons who do not have a criminal history (Beaudoin, Lavoie, Hodgins, , 1993)

In males, there only was a relation between persecutory ideations and aggression in those who had higher levels of ideational distress. The same was found in females. However, in females, there was also a relation between persecutory ideations and aggression in the low distress group. This difference in moderating effect of ideational distress may be

explained by a gender difference in the use of safety behaviors (Freeman et al., 2007) in response to delusions. Females are more likely to adopt a tend-or-befriend coping strategy when under threat (Taylor et al., 2000; Teasdale, Silver, & Monahan, 2006), and are less likely compared to males to show aggression as a safety behavior

Hellerstein et al stated that nearly 40% patients with auditory hallucinations hear commanding type of words asking them to behave in various manners which may cause self-harm act or violent act.

SYMPTOM PROFILE TOOLS

Arango et al - higher scores on the PANSS had violence risk.
Ellouze et al - PANSS scores revealed that violent patients had more general symptoms. Haddock et al used PSYRATS scale and found relation between psychotic symptoms, suicidal behavior and violence.

SUBSTANCE ABUSE

Flavio poldrugo, 1998 reported link between alcoholism and personality disorder, suicide attempts, violence and legal problems and expressed caution in patients with dual diagnosis

According to Erkiran et al, 2006; Putkonen et al, 2004-Persons with schizophrenia also tend to have comorbid substance use problems, which further increase the risk of violent behavior

Goethals et al,2015 studied relationship between substance abuse and violence with/without psychotic illness in a forensic psychiatry setup and found out that violence was more among those with substance abuse and when co-morbid psychotic illness is present the risk of violence further rises.

Another forensic psychiatric study by Steele, J et al, 2003, Scotland in which relation with violence was compared between schizophrenia patients with and without substance dependence. 40.1% had dependence pattern of substance abuse and those with dependence pattern were found to be having high violent behavior, high convictions ; low negative symptoms; low thought disturbances; arrested for criminal cases rather than civil cases.

Nestor et al (2014) studied relation between mental disorder and violence based on personality, substance use and clinical features. According to this study, individuals with substance abuse and other substance related disorders had 12 to 16 times increased risk for violence but schizophrenia/ affective disorders had just 5 fold risk for violence. This effect by substance leading to violence has been proposed to have 2 mechanisms- one is by directly acting as a depressant- causing changes in affect regulation and the second one indirectly due to co-morbid

psychiatric conditions. Maximum violence was reported in group with substance abuse and disordered personality.

VICTIMISATION

According to McPhedran, S. (2009) - negative experiences in the childhood like exposure to domestic violence may lead to wide array of violent behaviors . Hence research in future must have eyes on these aspects of relationships, and also their psychosocial contributors. For instance, it will be a gaining experience if we interrogate the amount by which various aspects of domestic violence corresponds with the onset of violent acts in children, and methods in which various types of dysfunctionality in the family gets associated with various types of developmental emotional and behavioral difficulties in childhood and psychiatric problems in future.

Sarchiapone et al, 2009 studied relation between childhood traumatic experiences and compared them with future violent behavior in a retrospective study of prisoners and found out that violent acts were more in group with more traumatic childhood and they also had multiple convictions in comparison to others.

BERKKE ET AL studied the risks that patients of schizophrenia face in the community

- 172 pts with schizophrenia & schizoaffective disorder
- 65(38%)- victim of a crime (91 % violent)
- Symptoms severity & substance use were significant predictors of victimisation
- Patients are nearly 15 times at risk of being victimized because of a violent crime than for act of committing violence

WALSH ET AL. (2003)

- Victimized patients—significantly are at high risk to feel threatened, fearful and not safe.
- Common pathway with violence
- Occurrence of violence or victimisation or both are all governed by various complex interactions between the family circle as well as social circle.

VAN WEEGHEL ET AL

Important risk factors for victimisation include

- magnitude of symptoms of psychosis,
- abuse/ dependence pattern of various substances,
- homeless,
- prior history of being victimised,
- prior conviction and criminal activity

DEAN ET AL IN UK (708 patients)

- Four factors implied victimisation
 1. Young age at onset of illness
 2. Prior history of victimisation,
 3. Not in daily contact with family members,
 4. Presence of any co-morbid personality disorder predominantly cluster-B type

TAMSIN ET AL- studied sample of de-institutionalised patients in the community

Community VS Patients

Schizophrenia and other psychotic disorders found to have

1. violent victimisation- 10.1% vs. 6.6%
2. Sexual victimisation - 1.7% vs. 0.3%

Though the odds ratio is more for victimisation in the community there are not much that have been recorded officially

FEDERICO et al-

Many socio-demographic factors have been found to be associated with victimisation but most important factor has been occupation.

Unemployed were found to be more victimized owing to the following reasons-

1. At many of the offices and workplaces environment is such that it is well maintained and regulated and nobody can influence or victimize others.
2. Those employed as a fact of being in touch with officials have good social functioning

MacArthur Violence Risk Assessment Study

- violent perpetration and violent victimisation among discharged inpatients(ten weeks after discharge)
- The authors report that 13.5% had perpetrated violence and 15.2% had been victims of violence

Teplin et al- studied about Crime victimisation in schizophrenia patients

- Amount of people victimized more than 10 times greater in number compared to the general population
- Violent incidents -168 per 1000 which is 4 times greater in number compared to the general population

- Based on type of violent crime (rape or sexual harassment or assault, theft, and other subcategories), prevalence was 10 to 20 times greater in number than the general population

INSIGHT AND VIOLENCE

BUCKLEY ET AL, 2014

- Studied relation between insight and violence in 115 patients of schizophrenia in jail setup
- More the symptoms in the patient more the difficulties in functioning and related to both violence as well as lack of awareness of illness (insight). As a result they may commit crime without being aware of the legal implications of their violent act. So increasing insight into illness and maintaining them on compliance to treatment can play a role in reducing violence

SUICIDAL IDEATION AND VIOLENCE

Katrina witt et al,2014 analysed the relation between suicide and violence through the sample from 'CATIE TRIAL' Suicidal ideations in schizophrenia were present in both male and female in equal proportion and violence was related positively to those having suicidal ideations/ threats.

SOCIAL SUPPORT

Martínez-Martín et al.2011 pointed out that in Schizophrenia Outpatients Violent Behavior linked to Self-Perceived Needs by evaluating the relationship between them.

- 895 outpatients with schizophrenia studied.
- TOOLS-
 1. Modified Overt Aggression Scale.
 2. Camberwell Assessment of Need assessing 6 areas-food, household skills, taking care of self, activities in daytime, psychotic symptoms, treatment satisfaction, and company.
- "psychotic symptoms" (81%), " activities in daytime " (60.6%), and "household skills" (57.5%) were the most common needs.
- More severe the illness more was the self-perceived needs. And hence more the aggression

INDIAN STUDIES

Among the developing countries from Asia and Africa- india ranks high and leads in number of studies. From 1960's many prevalence studies like surya et al; dube et al; sethi et al etc were done and estimated prevalence to be 1.1 to 4.3 per 1000. One rural study Sartorius et al, 1986

found out incidence to be 4.2/10,000. Recently in 2003, world health survey, initiative by WHO was also done in india with samples from 6 indian states quoted prevalence of psychosis to be ranging from 0.7% to 3.7% and reported only 36% to 85% sought treatment. Among them high socio-economic status and urban areas received more treatment. Tripathi MN et al, 2013 conducted a study at Guwahati medical college in patients admitted in psychiatric hospital setup for a period of 1 year with sample size of 472. Among them 263 had violent behavior according to Modified Overt Aggression Scale. Among those who were violent

1. 53.6% - verbal ,
2. 36.4%- aggression towards objects,
3. 32.2% - aggression towards others, and
4. 16.1% - aggression towards self

37% had comorbid alcohol dependence pattern and out of them 73% had aggression, so those who had dual diagnosis had more violent behavior.

Recently a study published from Gujarat looking for prevalence of aggression in 1st episode schizophrenia spectrum stated that 68% of males and 51% females showed aggression and aggression co-related much with symptom profile of patient than the personality traits.

OPERATIONAL DEFINITION

As violence is a complex term an operational definition for violence in this study is fixed before proceeding further.

- * In this study- term Violence (=aggression) are used simply to denote “behaviors by one person causing pain, damage (verbal, physical), or destruction to another person or property”. Hence the terms violence and aggression have been used interchangeably in this study.

- * Suicide is form of self-directed violence

AIM OF THE STUDY

AIM

- * To study various risk factors like socio-demographic, disorder related, symptom profile, alcohol use, insight, victimisation, suicidal ideation, disability, social support for VIOLENCE IN SCHIZOPHRENIA

OBJECTIVES

- * To compare socio-demographic, disorder related, symptom profile, alcohol use, insight, victimisation, suicidal ideation, disability, social support between 2 groups of schizophrenia- violent and non-violent
- * To assess factors associated with severity of violence within the violent group.

METHODS AND MATERIALS

ETHICAL CONSIDERATIONS

An application was submitted to the ethics committee of Madras medical college under Dr.MGR medical university in the month of April 2015. Permission was given to conduct the research in institute of mental health. The ethical committee approval obtained in May 2015 and document is enclosed in the appendix.

Need and purpose for the study, procedure, confidentiality of details, benefits due to study were all explained to participants.

STUDY SETTING

Institute of mental health, Kilpauk, Chennai has been center for treatment of psychiatric illness for the last 221 years. Spread around an area of 45 acres and located in an easily accessible location at Chennai this hospital cater to the needs of patients from all around Tamilnadu, Pondicherry and Andhra Pradesh and is utilized by more than 400 outpatients/ day on an average with more than 1200 inpatients.

STUDY POPULATION

Patients with a reliable informant attending outpatient department as well as inpatients of institute of mental health

SAMPLE SIZE

Total-100.

50 CASES (VIOLENT); 50 CONTROLS(NON-VIOLENT)

STUDY PERIOD

3 MONTHS (JUNE 2015 TO AUGUST 2015)

STUDY DESIGN

CASE-CONTROL STUDY

SAMPLING METHOD

Non- probability sampling- Convenient sampling

INCLUSION CRITERIA

CASES

1. Subjects between 20-50 years of age
2. Subjects diagnosed to have schizophrenia as per ICD-10
with violence
3. Subjects who have given written consent to participate in the study

CONTROLS

1. Subjects between 20-50 years of age
2. Subjects diagnosed to have schizophrenia as per ICD-10 **without violence**
3. Subjects who have given written consent to participate in the study

EXCLUSION CRITERIA

1. Subjects with neurological and other medical conditions
2. Subjects who have other mental disorder diagnosed as per ICD-10 except for alcohol consumption
3. Subjects in whom reliability of attender is questionable or inadequate history due to various reasons like distant relative, language barrier

PROCEDURE

After ethical committee approval, Patients were recruited from both outpatients as well as inpatients of institute of mental health. Informed consent obtained. SCAN based on ICD-10 DCR was used to diagnose schizophrenia and also for subtyping. Case selection criteria for inclusion and exclusion were applied and selected cases were further divided into violent (CASES) and non-violent(CONTROLS) based on

history of violence and modified overt aggression scale(MOAS). Further data – socio-demographic, disorder related, symptom profile are collected and other tools as follows used. Details statistically analysed using SPSS 20(statistical analysis software).

TOOLS USED AND VARIABLES THAT ARE TO BE STUDIED

SEMI STRUCTURED INTERVIEW SCHEDULE:

The schedule was developed for the study to collect data regarding the following

- * Socio demographic details

- * Disease related characteristics (only for study group) which included
 - Age of onset of illness
 - Number of hospitalization
 - Duration of illness and treatment
 - Duration of untreated psychosis
 - Phase of the illness
 - Compliance
 - Number of relapses
 - Family history of illness

- * SCAN & ICD-10 DIAGNOSTIC AND RESEARCH CRITERIA-
Diagnosis of schizophrenia and for subtyping
- * PANSS, PSYRATS for Symptom profile of disorder
- * AUDIT-Alcohol use
- * VICTIMISATION QUESTIONNAIRE-Victimisation
- * BCIS-Insight
- * Suicidal ideations

DETAILS OF INSTRUMENTS USED

- * **Socio-demographic data sheet**

A structured proforma was used to elicit information about the demographic details and illness characteristics of the patients with schizophrenia.

- * **Schedules for Clinical Assessment In Neuropsychiatry
(WHO, 1999)**

Manuals made by the World Health Organisation (WHO) for the purpose of assessing, measuring and classifying mental illnesses. It can be used in variety of settings and both clinical as well as research

settings. The stability and validity of this schedule has been proved in various studies.

SCAN is a semi structured and clinical interview schedule. It can do cross examination of the individual. This is a flexible instrument as it can proceed in any order. It is divided into various sections and each section contains certain questions pertaining to that section. If these questions are answered positively, then the questions beneath the cut-off point are also asked.

POSITIVE AND NEGATIVE SYNDROME SCALE (PANSS)

The PANSS developed by S R Kay et al, is used to assess symptoms in schizophrenia and it finds use in both clinical as well as research settings. It is a 30 item rating scale created on the basis that schizophrenia has two distinct symptom profiles namely the positive and the negative symptoms. The patient is rated on a 1 to 7 rating scale on 30 different symptoms which includes positive, negative and general psychopathology. PANSS roughly takes about 40 minutes to complete. It is scored based on the information related to last one week, on a 0-6 point continuum. The reliability and internal consistency estimates showed Cronbach's alpha of 0.809 and 0.931.

Modified overt aggression scale (MOAS)

The Overt Aggression Scale-Modified (OAS-M) was formulated by E Coccaro and others in 1991 to estimate violence (=aggression). The scale is a 25-item, semi-structured interview with nine subscales. For our study purpose, we assessed the aggression on four subscales which records the forms of aggression and their severity. The four subscales based on increasing severity were: verbal aggression, aggression against objects, aggression against others, and aggression against self. Each subscale severity is estimated separately and further multiplied by weight assigned to each subscale (1 for verbal aggression, 2 for aggression against objects, 3 for aggression against others, and 4 for aggression against self). Subjects with aggressive behaviours are defined as those having a total score > zero. This scale adequate validity data, moderate reliability, high intraclass correlation (>0.91)

BECK'S COGNITIVE INSIGHT SCALE

The 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.

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,
- Getting around,
- Self care,
- Getting along with people,
- Life activities, and
- Participation in society.

In this study the short version of the schedule has been used. The score ranges from 1-5 for each item. Greater the score greater the

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.

VICTIMISATION QUESTIONNAIRE

Juvenile victimisation questionnaire was translated to study victimisation and compare socio-demographic variables by Ahmed El Missiry et al. Victimization questionnaire was used to see all the domains of physical assault, bullying and teasing, assault by weapons with or without injury; sexual assault/ rape/ harassment; child maltreatment, property robbery/ vandalism; witness of a major traumatic event in deciding whether person victimized or not

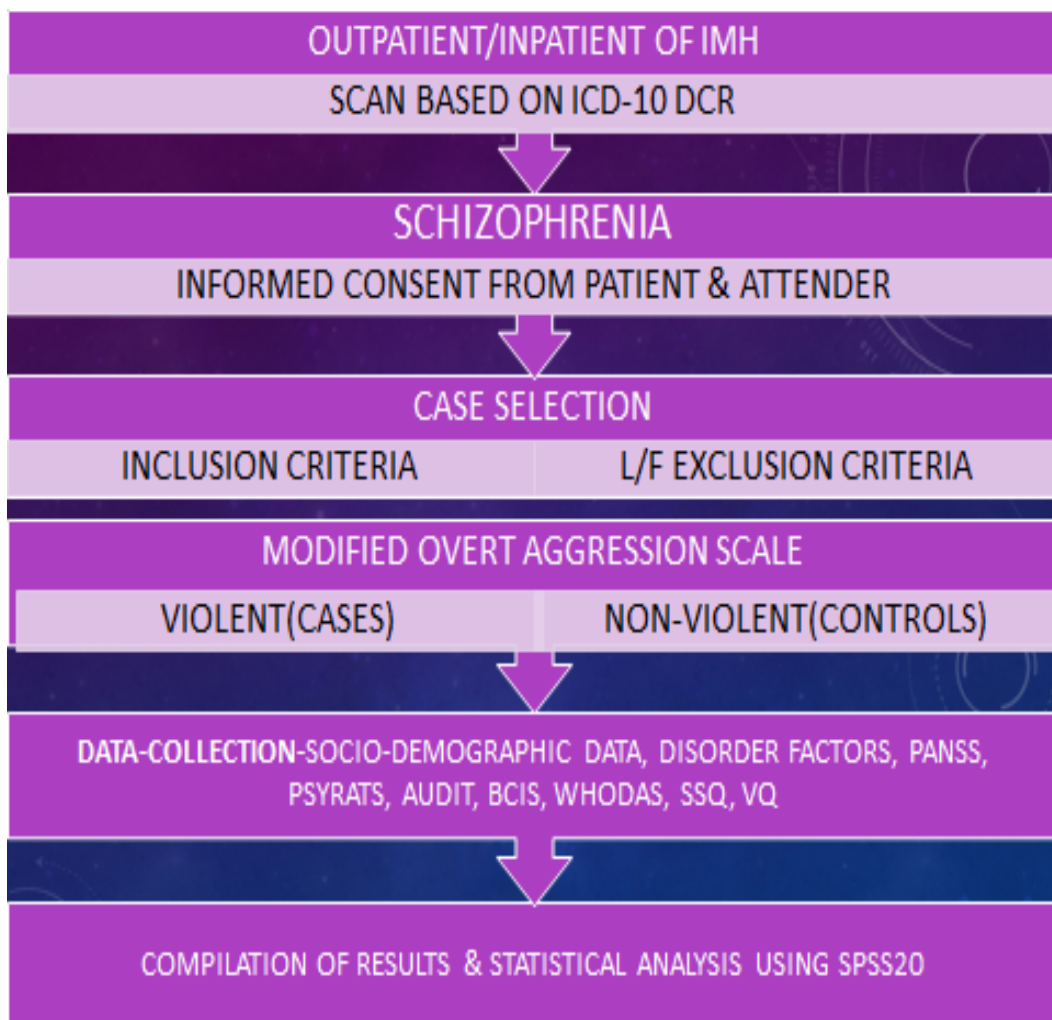
SOCIAL SUPPORT QUESTIONNAIRE (SSQ)

The social support scale used is the one developed by Pollack and Harris,1998.It measures the perceived social support. The 18 item scale has included Questions related to help, concern, support, reinforcement and criticism that a person gets from one's family, friends, social acquaintances and working colleagues. Higher the scores higher the social support. It has very satisfactory psychometric properties. It can be used in situations where perceived social support is needed as dependant or independent or intervening factor

STATISTICAL ANALYSIS

* Using SPSS 20 software for statistical analysis and used

1. Student 't' test
2. Chi-square test
3. ANOVA(ANalysis Of Variance)
4. Pearson's co-relation coefficient



RESULTS

Table 1 Age distribution of the study population (n=100)

Age group	Violent group N (%)	Non-Violent group N (%)	Total N (%)
21- 30 years	15 (30)	13 (26)	28 (28)
31 - 40 years	26 (52)	28 (56)	54 (54)
41 – 50 years	9 (18)	9 (18)	18 (18)
Total	50 (100)	50 (100)	100 (100)

Mean age: 34.53 years; Standard deviation: 6.34 years

Minimum: 21 years

Maximum: 49 years

Fig 1: Bar chart showing age distribution of the study population (n=100)

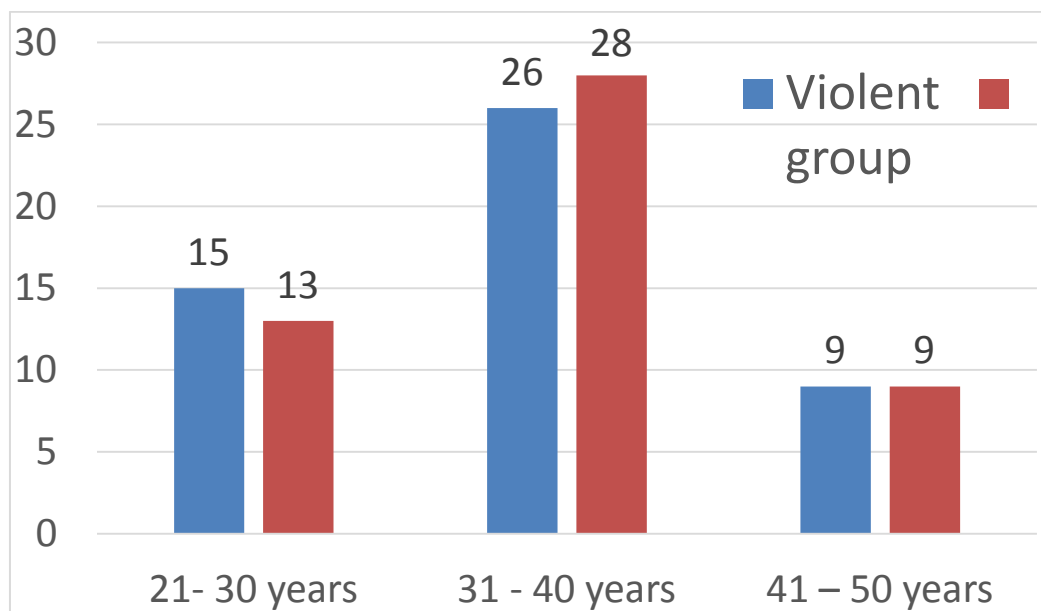


Table 2

Comparison of age among the groups (n=100)

Student “T” test

Group	Mean Age	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	34.46	5.919	0.140	0.913	-2.69 to 2.38
Non-Violent group	34.60	6.797			

Comments:

The mean age difference between violent group and non-violent group was not statistically significant.

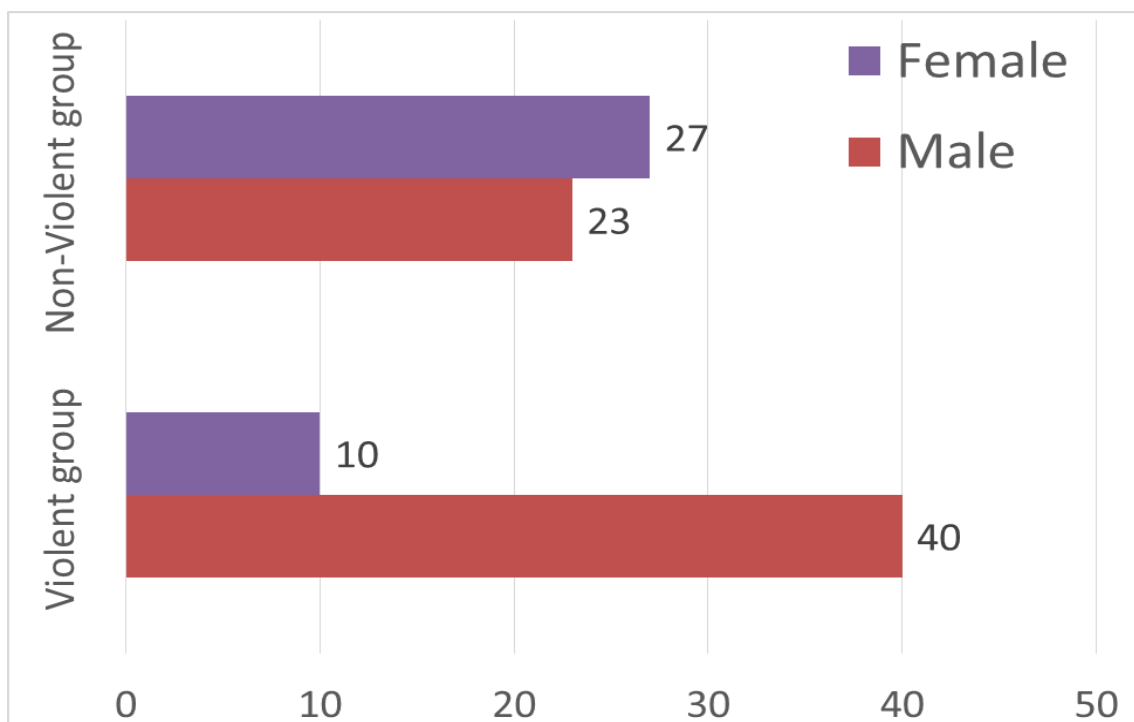
Table 3 Gender distribution of the study population (n=100)

Gender	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Male	40 (80)	23 (46)	63 (63)
Female	10 (20)	27 (54)	37 (37)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 12.398 p value: <0.001

Comments: In the violent group 80% were males and in the non-violent group 46% were males and this difference was statistically significant.

Fig 2: Bar chart showing gender distribution of the study population (n=100)



**Table 4 Distribution of the study population
according to marital status (n=100)**

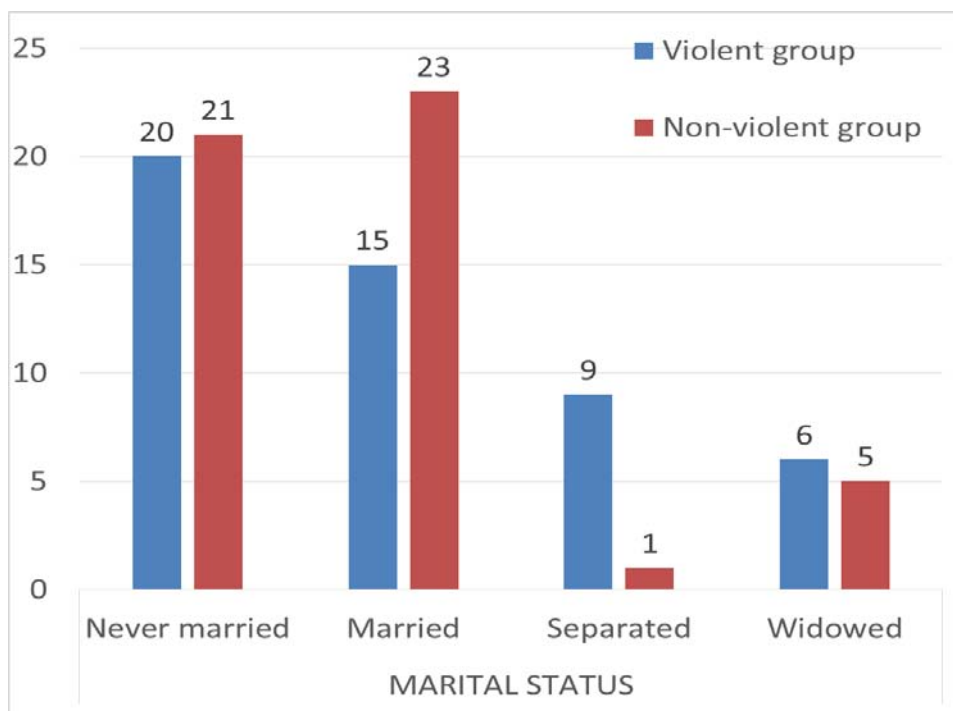
Marital status	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Never married	20 (40)	21 (42)	41 (41)
Married	15 (30)	23 (46)	38 (38)
Separated	9 (18)	1 (2)	10 (10)
Widowed	6 (12)	5 (10)	11 (11)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 8.20

p value: 0.042

Comments: Number of widowed and divorced subjects were high in the violent group than non-violent group and this difference was statistically significant.

**Fig 3: Bar chart showing study population
according to marital status (n=100)**



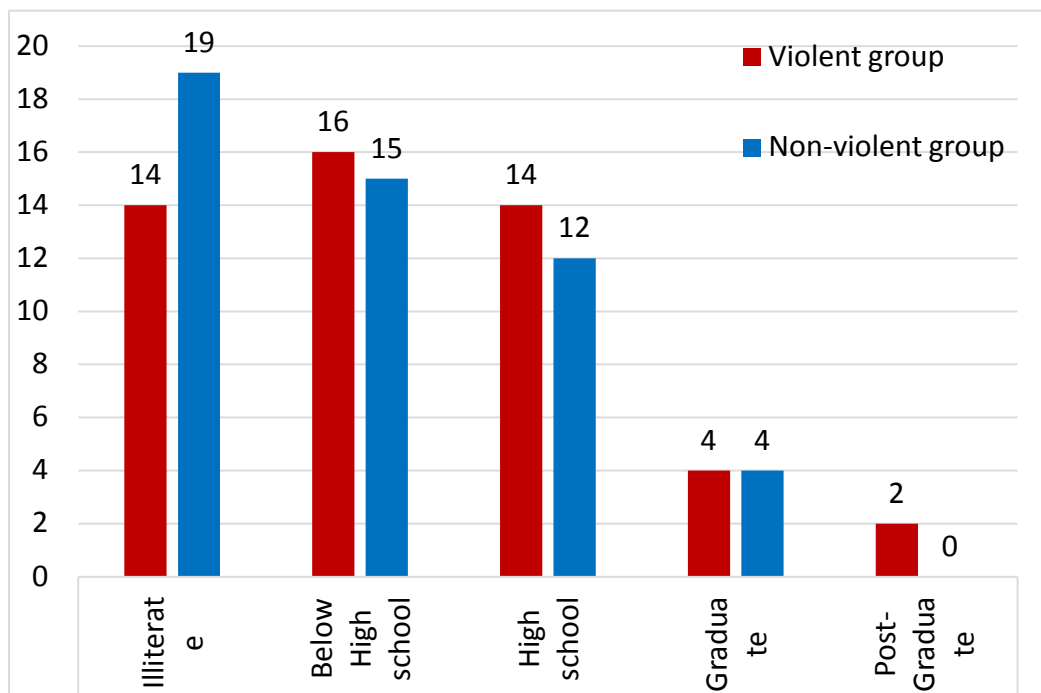
**Table 5 Distribution of the study population
according to education (n=100)**

Education	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Illiterate	14 (28)	19 (38)	33 (33)
Below high school	16 (32)	15 (30)	31 (31)
High school	14 (28)	12 (24)	26 (26)
Graduate and above	6 (12)	4 (8)	10 (10)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 2.944 p value: 0.567

Comments: There was only minor difference in educational classes between the groups and this difference was not statistically significant.

**Fig 4: Bar chart showing study population
according to education (n=100)**



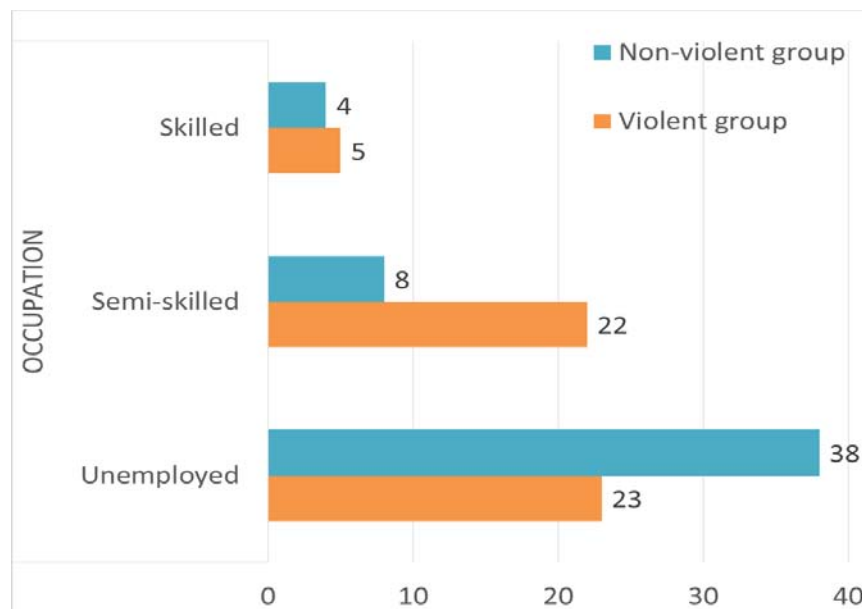
**Table 6 Distribution of the study population
according to occupation (n=100)**

Occupation	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Unemployed	23 (46)	38 (76)	61 (61)
Semi-skilled	22 (44)	8 (16)	30 (30)
Skilled	5 (10)	4 (8)	9 (9)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 10.333 p value: 0.006

Comments: Number of unemployed subjects were high in the non-violent group than violent group and this difference was statistically significant.

**Fig 5: Bar chart showing study population
according to occupation (n=100)**



**Table 7 Distribution of the study population
according to socio economic status (n=100)**

Socio economic status	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Low SES	37 (74)	41 (82)	78 (78)
Middle SES	13 (26)	9 (18)	22 (22)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 0.932 p value: 0.334

Comments: There was only minor difference in socio economic status between the groups and this difference was not statistically significant.

**Table 8 Distribution of the study population
according to area of residence (n=100)**

Area of residence	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Rural	20 (40)	27 (54)	47 (47)
Semi-urban	18 (36)	15 (30)	33 (33)
Urban	12 (24)	8 (16)	20 (20)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 2.115 p value: 0.347

Comments: There was only minor difference in the area of residence between the groups and this difference was not statistically significant.

**Table 9 Distribution of the study population
according to place of residence (n=100)**

Place of Residence	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Own home	31 (62)	35 (70)	66 (66)
Relative	14 (28)	14 (28)	28 (28)
Neighbourhood	5 (10)	1 (2)	6 (6)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 2.909 p value: 0.234

Comments: There was only minor difference in the place of residence between the groups and this difference was not statistically significant.

**Table 10 Distribution of the study population
according to age of onset of schizophrenia (n=100)**

Age of onset	Violent group N (%)	Non-Violent group N (%)	Total N (%)
20 to 25 years	20 (40)	26 (52)	46 (46)
26 to 30 years	22 (44)	19 (38)	41 (41)
31 to 35 years	8 (16)	5 (10)	13 (13)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 1.694 p value: 0.429

Comments: There was only minor difference in the age of onset of schizophrenia between the groups and this difference was not statistically significant.

**Table 11 Distribution of the study population
according to number of hospitalizations (n=100)**

Number of hospitalizations	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Less than 5	35 (70)	39 (78)	74 (74)
More than 5	15 (30)	11 (22)	26 (26)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 0.832

p value: 0.362

Comments: There was only minor difference in the number of hospitalizations between the groups and this difference was not statistically significant.

**Table 12. Distribution of the study population
according to subtypes of schizophrenia (n=100)**

Subtypes of schizophrenia	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Paranoid	47 (94)	38 (76)	85 (85)
Catatonic	0 (0)	1 (2)	1 (1)
Hebephrenic	3 (6)	1 (2)	4 (4)
Others	0 (0)	10 (20)	10 (10)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 12.953

p value: 0.005

Comments: Among the violent group, majority (94%) were of paranoid type and 6% were hebephrenic type while among the non-

violent group, majority (76%) were of paranoid type and 2% had hebephrenic type and catatonic type and 10% had other types of schizophrenia.

Table 13 Distribution of the study population according to phase of illness (n=100)

phase of illness	Violent group N (%)	Non-Violent group N (%)	Total N (%)
First episode	17 (34)	14 (28)	31 (31)
Active	24 (48)	17 (34)	41 (41)
Remission	0 (0)	15 (30)	15 (15)
Relapse	9 (18)	4 (8)	13 (13)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 18.409

p value: <0.001

Comments: The incidence of first episode, active illness and relapse was higher in violent group except remission which was 30% among non-violent group versus 0% in the violent group and this difference in the phase of illness between the groups was statistically significant.

Fig 6 Bar chart showing study population according to phase of illness (n=100)

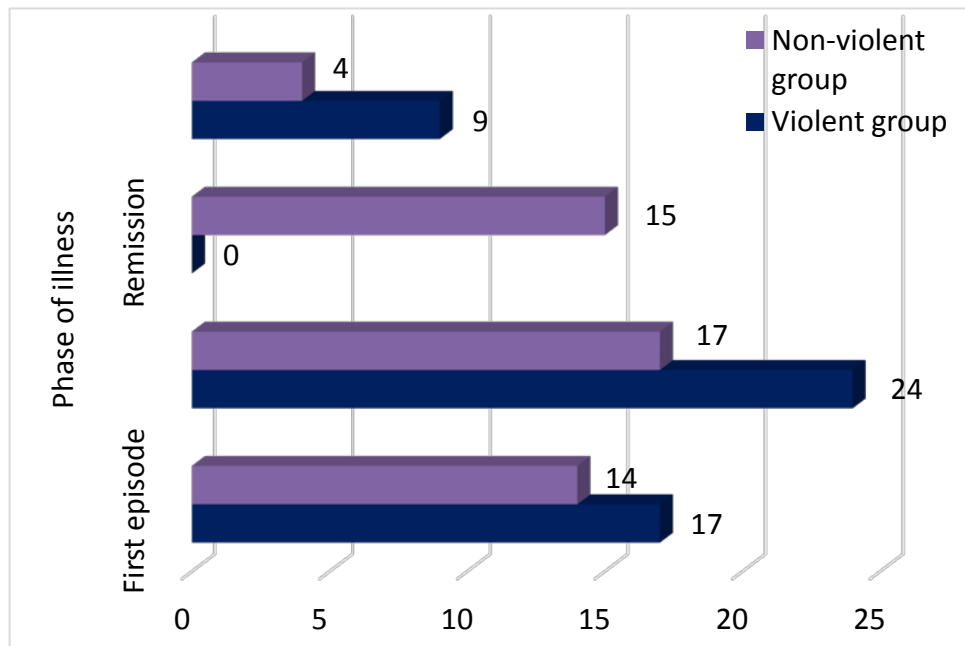


Table 14 Distribution of the study population according to duration of illness (n=100)

Duration of illness	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Less than 5 years	36 (72)	17 (34)	53 (53)
5 to 10 years	14 (28)	26 (52)	40 (40)
>10 years	0 (0)	7 (14)	7 (7)
Total	50 (100)	50 (100)	100 (100)

Chi square value: 17.411

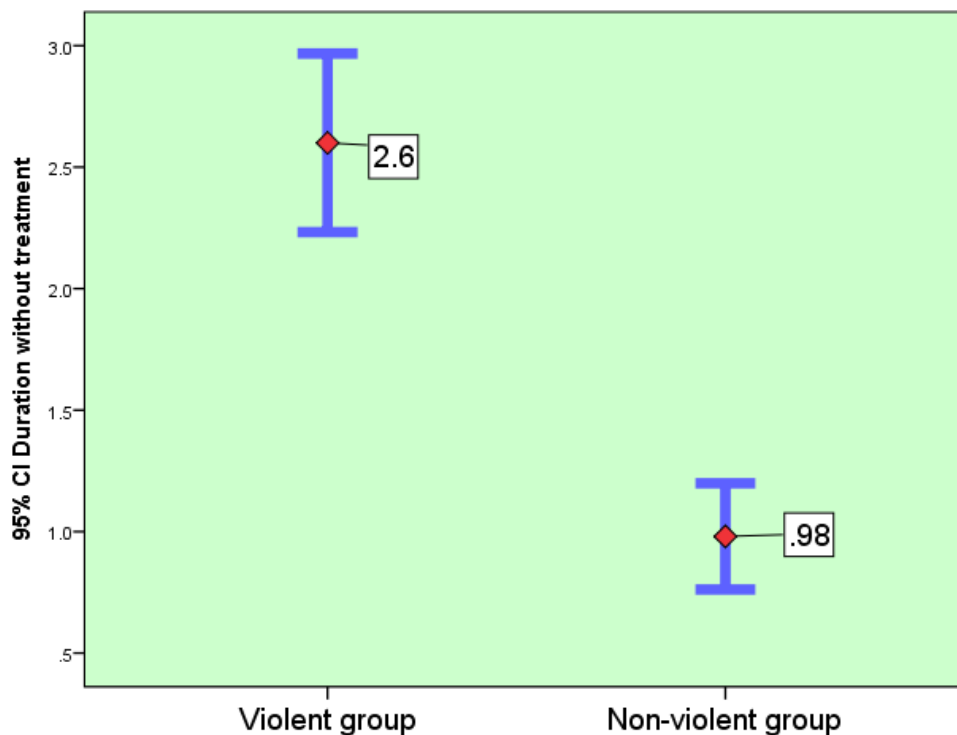
p value: <0.001

Comments: The duration of illness was less than 5 years in 72% of the violent group while 66% in the non-violent group had duration of illness of above 5 years and this difference in the duration of illness between the groups was statistically significant.

Table 15 Comparison of duration without treatment among the groups (n=100) Student “T” test

Group	Mean duration without treatment	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	2.60	1.294	1.620	<0.001	1.198 to 2.042
Non-Violent group	0.98	0.769			

Fig 7 Box plot showing study population according to duration without treatment (n=100)



Comments: Subjects in the violent group had 2.6 years without treatment in comparison to 1 year in the non-violent group and this mean difference in duration without treatment between violent group and non-violent group was statistically significant.

Table 16 Comparison of number of relapses among the groups (n=100)

Student “T” test

Group	Mean number of relapses	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	3.36	1.495	2.840	<0.001	2.359 to 3.321
Non-Violent group	0.52	0.839			

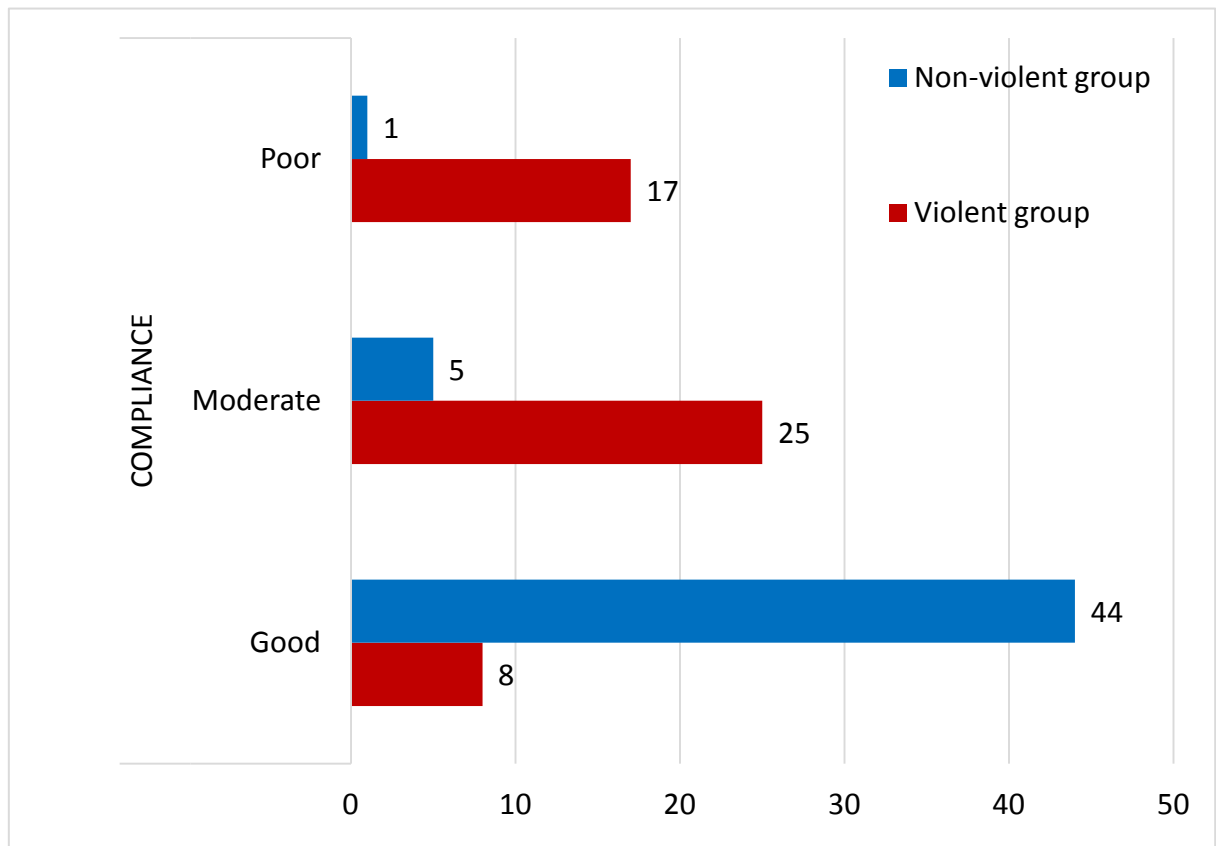
Comments:

Subjects in the violent group had a 3.36 times of mean relapses in comparison to 0.5 in the non-violent group and this mean difference in number of relapses between violent group and non-violent group was statistically significant.

Table 17 Distribution of the study population according to treatment compliance (n=100)

Compliance	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Good	8 (16)	44 (88)	52 (52)
Moderate	25 (50)	5 (10)	30 (30)
Poor	17 (34)	1 (2)	18 (18)
Total	50 (100)	50 (100)	100 (100)

Fig 8 Bar chart showing study population according to treatment compliance (n=100)



Chi square value: 52.479

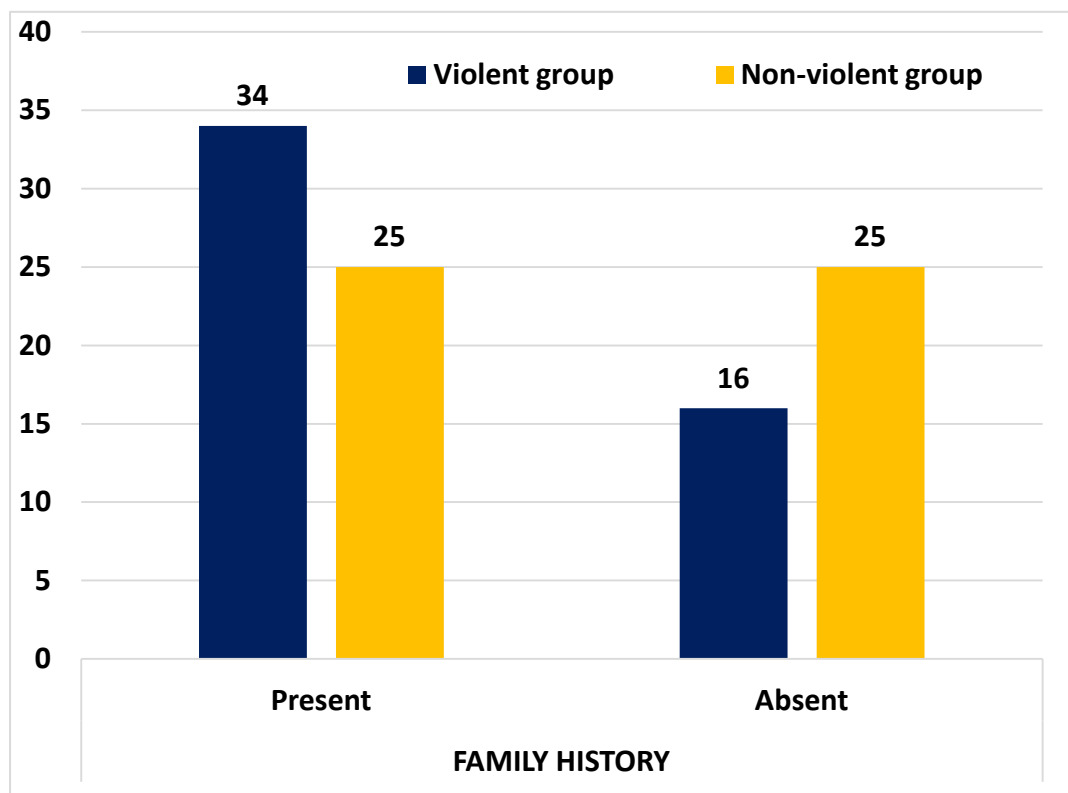
p value: <0.001

Comments: The treatment compliance was good in 88% of the non-violent group while 84% in the violent group had moderate or poor compliance and this difference between the groups was statistically significant.

Table 18 Distribution of the study population according to family history (n=100)

Family history	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Present	34 (68)	25 (50)	59 (59)
Absent	16 (32)	25 (50)	41 (41)
Total	50 (100)	50 (100)	100 (100)

Fig 9 Bar chart showing study population according to family history (n=100)



Chi square value: 3.348

p value: 0.067

Comments: The positive family history was present in 68% of the violent group while 50% in the non-violent group had positive family history and this difference between the groups was not statistically significant.

**Table 19 Distribution of the study population
according to suicidal ideation (n=100)**

Suicidal ideation	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Present	19 (38)	6 (12)	25 (25)
Absent	31 (62)	44 (88)	75 (75)
Total	50 (100)	50 (100)	100 (100)

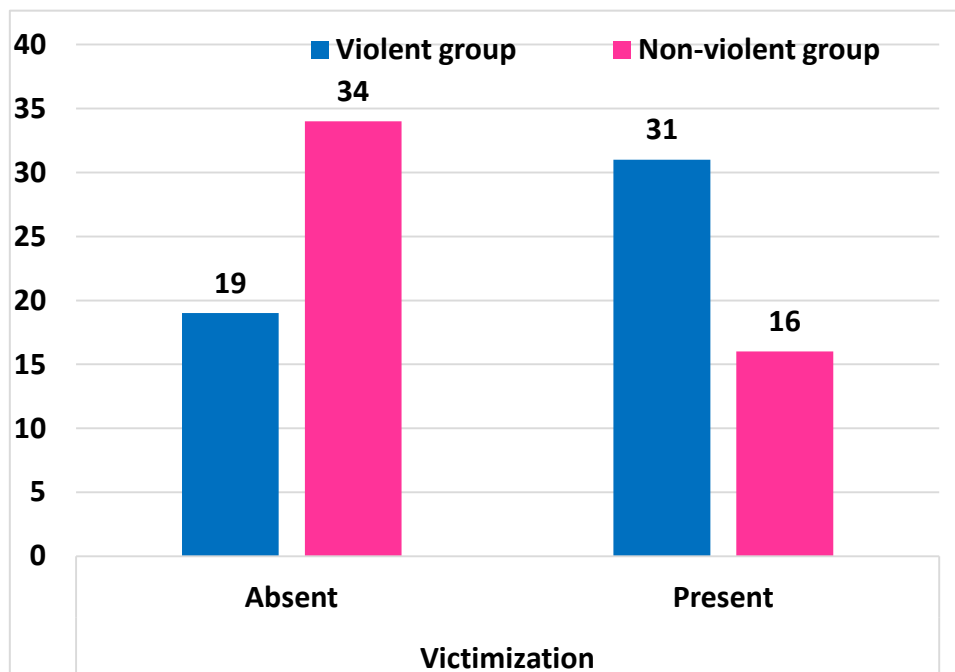
Chi square value: 9.013 p value: 0.003

Comments: Suicidal ideation was present in 38% of the violent group while 12% in the non-violent group had suicidal ideation and this difference between the groups was statistically significant.

Table 20 Distribution of the study population according to victimisation (n=100)

Victimisation	Violent group N (%)	Non-Violent group N (%)	Total N (%)
Present	31 (62)	16 (32)	47 (47)
Absent	19 (38)	34 (68)	53 (53)
Total	50 (100)	50 (100)	100 (100)

Fig 10 Bar chart showing study population according to victimisation (n=100)



Chi square value: 9.033 p value: 0.003

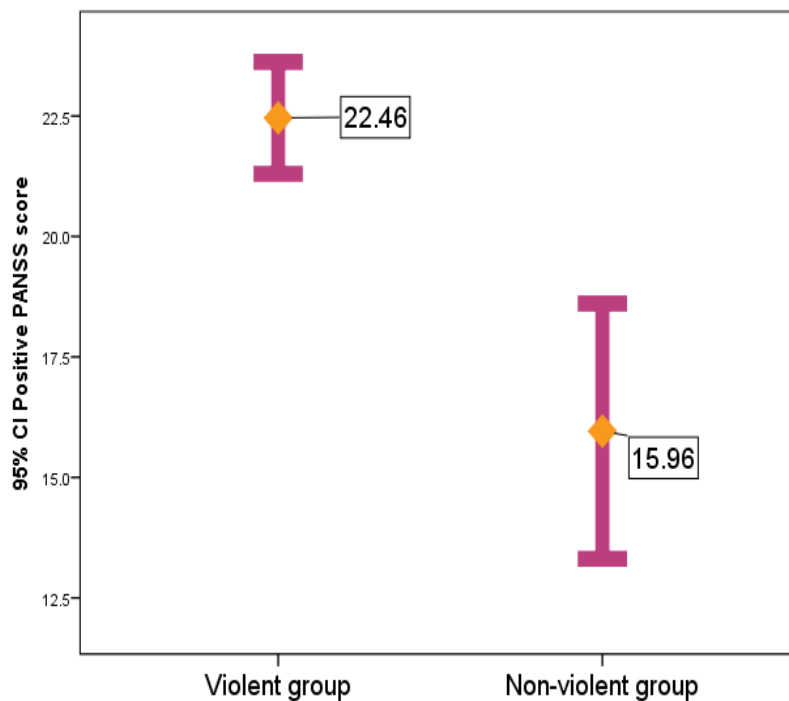
Comments: Victimization was present in 62% of the violent group while 32% were victimized in the non-violent group and this difference between the groups was statistically significant.

Table 21 Comparison of positive PANSS score among the groups (n=100)

Student “T” test

Group	Mean positive PANSS score	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	22.46	4.087	6.50	<0.001	3.644 to 9.356
Non-Violent group	15.96	9.320			

Fig 11 Box plot showing comparison of positive PANSS score among the groups (n=100)



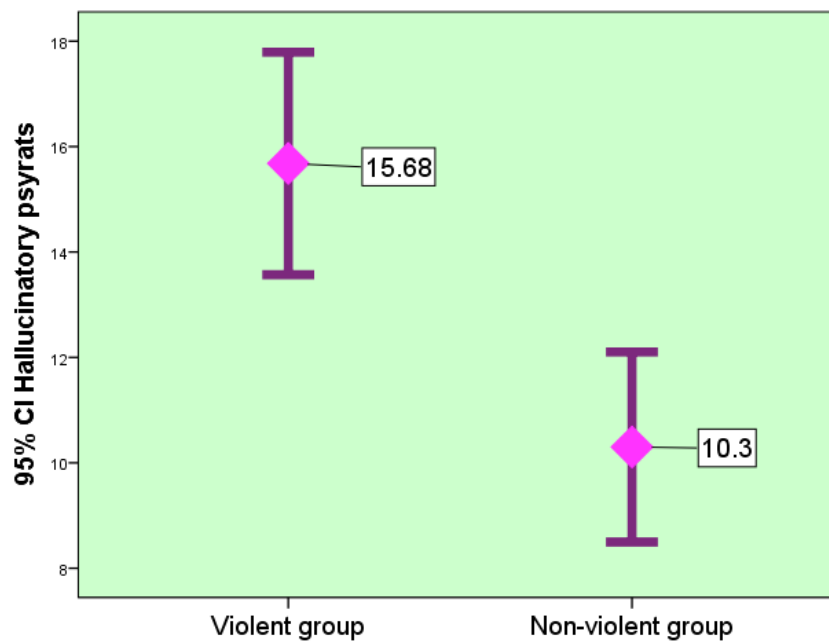
Comments: Subjects in the violent group had a mean positive PANSS score of 22 in comparison to 16 in the non-violent group and this mean difference was statistically significant.

Table 22 Comparison of hallucinatory psyrats among the groups (n=100)

Student “T” test

Group	Mean hallucinatory psyrats	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	15.68	7.430	5.380	<0.001	2.638 to 8.122
Non-Violent group	10.30	6.345			

Fig 12 Box plot showing comparison of hallucinatory psyrats among the groups (n=100)



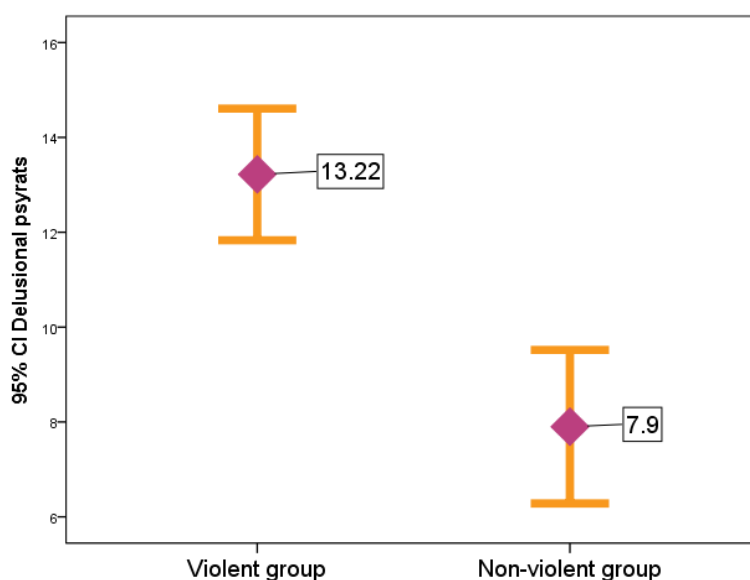
Comments: Subjects in the violent group had a mean hallucinatory psyrats of 15.68 in comparison to 10.30 in the non-violent group and this mean difference was statistically significant.

**Table 23 Comparison of delusional psyrats
among the groups (n=100)**

Student “T” test

Group	Mean delusional psyrats	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	13.22	4.883	5.320	<0.001	3.215 to 7.425
Non-Violent group	7.90	5.694			

**Fig 13 Box plot showing comparison of delusional
psyrats among the groups (n=100)**



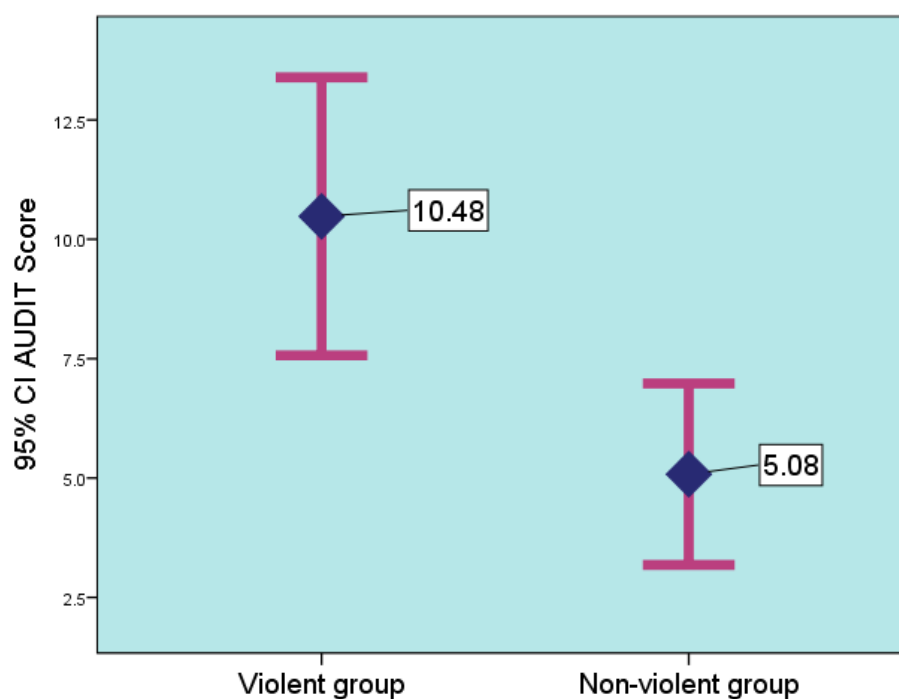
Comments: Subjects in the violent group had a mean delusional psyrats of 13.22 in comparison to 7.9 in the non-violent group and this mean difference was statistically significant.

Table 24 Comparison of AUDIT score among the groups (n=100)

Student ‘T’ test

Group	Mean AUDIT score	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	10.48	10.242	5.40	0.002	1.967 to 8.833
Non-Violent group	5.08	6.685			

Fig 14 Box plot showing comparison of AUDIT score among the



groups (n=100)

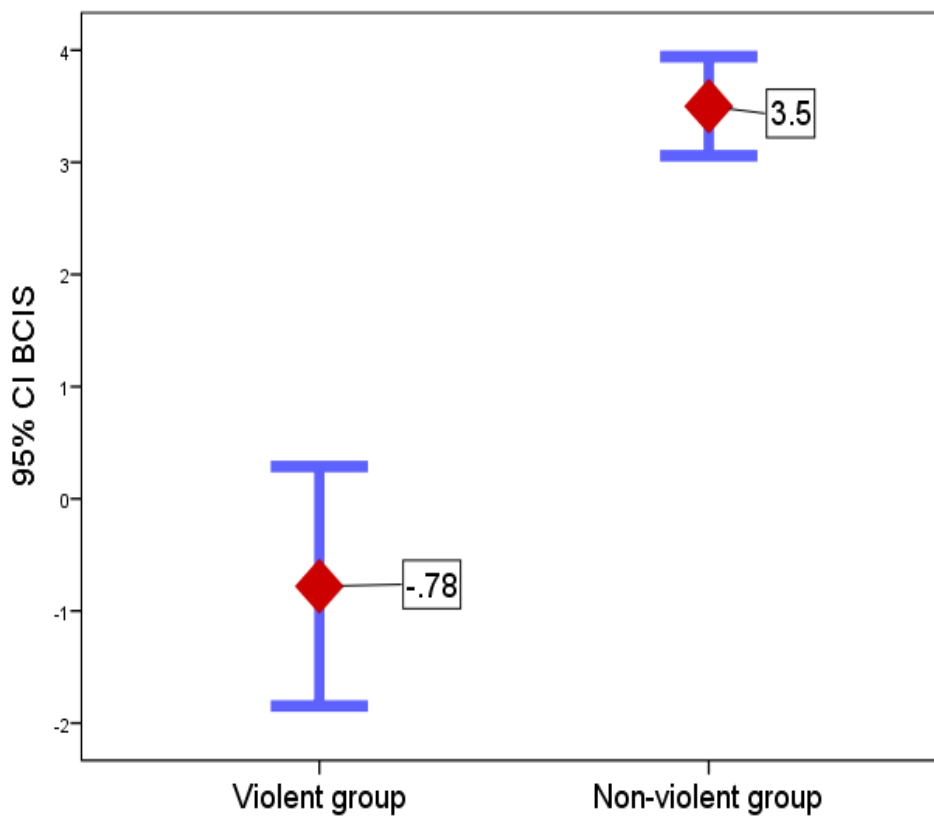
Comments: Subjects in the violent group had a mean AUDIT score of 10.4 in comparison to 5.08 in the non-violent group and this mean difference was statistically significant.

Table 25 Comparison of BCIS among the groups (n=100)

Student “T” test

Group	Mean BCIS	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	-0.78	3.754	-4.280	<0.001	-5.42 to -3.14
Non-Violent group	3.50	1.555			

Fig 15 Box plot showing comparison of BCIS score among the groups (n=100)



Comments: Subjects in the violent group had a mean BCIS of -0.78 in comparison to 3.50 in the non-violent group and this mean difference was statistically significant.

Table 26 Comparison of WHODAS among the groups (n=100)

Student “T” test

Group	Mean WHODAS	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	28.04	7.013	4.100	0.006	1.194 to 7.006
Non-Violent group	23.94	7.617			

Comments: Subjects in the violent group had a mean WHODAS of 28 in comparison to 24 in the non-violent group and this mean difference was statistically significant.

Table 27 Comparison of SSQ among the groups (n=100)

Student “T” test

Group	Mean SSQ	Std. Deviation	Mean difference	p value	95% confidence interval
Violent group	39.28	11.232	-3.980	0.053	-8.018 to 0.058
Non-Violent group	43.26	8.989			

Comments: Subjects in the violent group had a mean SSQ of 39 in comparison to 43 in the non-violent group and this mean difference was not statistically significant.

**Table 28: Previous history of violence
among the violent group (n=50)**

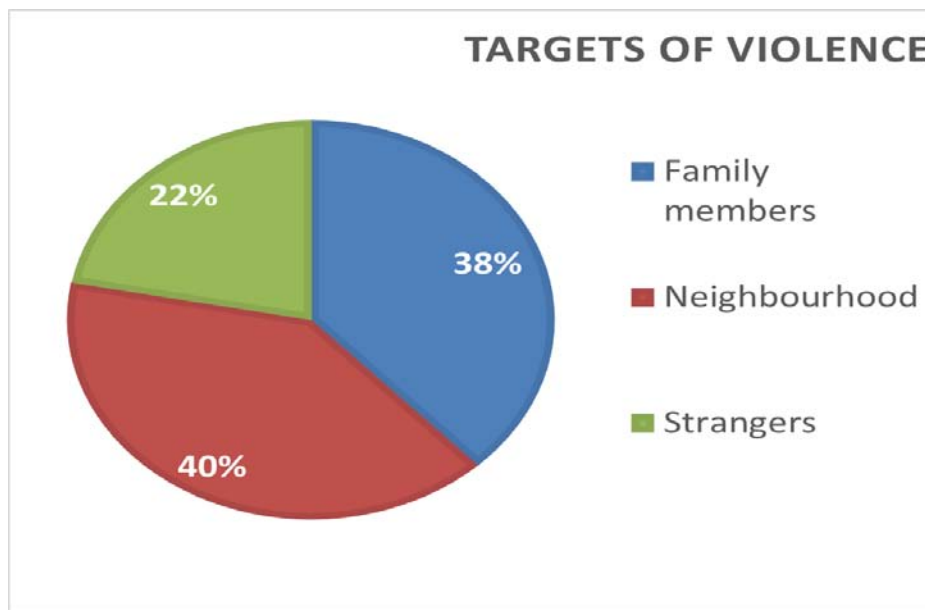
Previous history of violence	Frequency	Percent
Yes	28	56.0
No	22	44.0
Total	50	100.0

Comments: More than half (56%) of the subjects in the violent group had previous history of violence.

Table 29: Targets of violence among the violent group (n=50)

Targets of violence	Frequency	Percent
Family members	19	38
Neighbourhood	20	40
Strangers	11	22
Total	50	100.0

Fig 18 Pie chart showing targets of violence among the violent group (n=50)



Comments: Strangers were targeted in only 22% of the acts, whereas family and neighbourhood bore the brunt of most other acts of violence.

Table 30 Comparison of MOAS according to gender among violent group (n=50)

Student “T” test

Gender	Mean MOAS score	Std. Deviation	Mean difference	p value	95% confidence interval
Male	28.78	6.723	9.775	<0.001	5.27 to 14.27
Female	19.00	4.269			

Comments: Male subjects in the violent group had a mean MOAS of 28 in comparison to 19 among females and this mean difference was statistically significant.

Table 31: Distribution of the study population according to MOAS score and education among violent group (n=50)

Education	N	Mean MOAS score	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Illiterate	14	26.64	5.852	23.26	30.02
Below High school	16	30.38	5.886	27.24	33.51
High school	14	26.57	8.187	21.84	31.30
Graduate	4	19.25	8.261	6.10	32.40
Post-Graduate	2	16.50	2.121	-2.56	35.56
Total	50	26.82	7.411	24.71	28.93

ANOVA test was applied to test the difference in mean MOAS score between the groups followed by Bonferroni post-Hoc test for inter-group comparisons.

ANOVA test

p value	0.013
F statistic	3.551
Degree of freedom	4

Comments:

1) ANOVA test showed that there is a statistically significant difference in the mean MOAS levels between the various groups according to education.

Table 32 Comparison of MOAS score according to family history of violent behavior among violent group (n=50)

Student “T” test

Family history	Mean MOAS score	Std. Deviation	Mean difference	p value	95% confidence interval
Present	28.50	6.477	5.250	0.018	0.947 to 9.553
Absent	23.25	8.193			

Comments: Subjects with a positive family history had a mean MOAS score of 28.5 in comparison to 23.25 in subjects without a family history and this difference was statistically significant.

Table 33 Comparison of MOAS score according to previous history of violent behaviour among violent group (n=50)

Student “T” test

Previous history	Mean MOAS score	Std. Deviation	Mean difference	p value	95% confidence interval
Present	30.59	6.609	6.734	0.001	2.915 to 10.552
Absent	23.86	6.709			

Comments: Subjects with a positive previous history had a mean MOAS score of 30.5 in comparison to 23.8 in subjects without a previous history and this difference was statistically significant.

Table 34: Distribution of the study population according to MOAS score and AUDIT score among violent group (n=50)

AUDIT score	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Nil	24	28.67	7.275	25.59	31.74
Mild	4	21.25	4.787	13.63	28.87
Moderate	8	20.50	6.590	14.99	26.01
Severe	14	28.86	6.311	25.21	32.50
Total	50	26.82	7.411	24.71	28.93

ANOVA test was applied to test the difference in mean MOAS score between the groups followed by Bonferroni post-Hoc test for inter-group comparisons.

ANOVA test

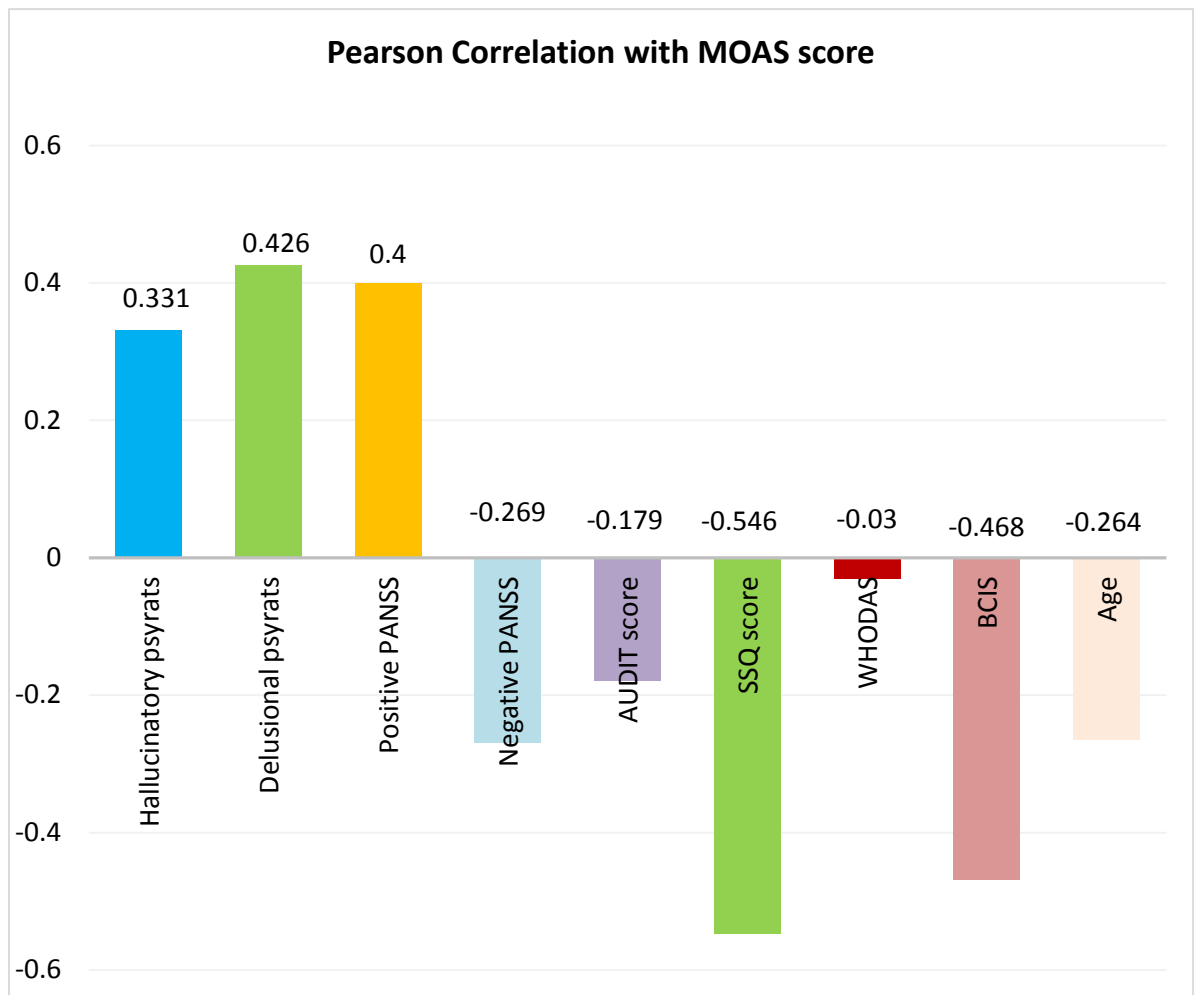
p value	0.010
F statistic	4.245
Degree of freedom	3

Comments: ANOVA test showed that there is a statistically significant difference in the mean MOAS levels between the various groups according to AUDIT score of schizophrenia among the violent group.

Table 35: Pearson Correlation matrix between MOAS scores and various parameters among the violent group (n=50)

Variables	Pearson Correlation	p value
MOAS score and Hallucinatory psyrats	0.331	0.019
MOAS score and delusional psyrats	0.426	0.002
MOAS score and positive PANSS	0.400	0.004
MOAS score and negative PANSS	-0.269	0.059
MOAS score and AUDIT score	-0.179	0.214
MOAS score and SSQ score	-0.546	<0.001
MOAS score and WHODAS	-0.030	0.836
MOAS score and BCIS	-0.468	0.001

Fig 17 Bar chart showing comparison of MOAS scores and various parameters among the violent group (n=50)



Comments:

1. Significant co-relation between MOAS scores and positive PANSS, PSYRATS(both delusional and hallucinatory), BCIS, SSQ
2. There was no statistically significant correlation between MOAS scores and negative PANSS, AUDIT score, WHODAS and age.

DISCUSSION

Mean age of the study group is 34.53 years and both the violent as well as non-violent group having similar mean age. Though this means that both the groups- be it violent or non-violent have similar age this will increase the comparability of other factors as there is not much difference between the groups. This finding is similar to that of buckley et al,1995 who stated that age, gender are not different between violent and non-violent.

Regarding gender, males were found to be more violent which has been supported by almost all the studies on violence except for a few like buckley et al.

According to Kelly et al, 2005 regarding social aspects of schizophrenia and found that patients from lower socio-economic class have earlier age of onset but longer durations of untreated illness and both these factors lead to poor prognosis. It also quoted that “patients with schizophrenia are over-represented in the homeless population”. But in our study there was not much difference in socio-economic status between the violent and non-violent group. This might be due to the fact that the entire pool of population for study come from a similar socio-economic status which is comparable, also none of the 100 studied

belonged to higher socio-economic status for better comparison and hence we can look for other factors that may play a role in violence.

Age of onset of schizophrenia- almost 50% of the sample had onset before the age of 25 yrs. Among the remaining age groups there was not much significance which was not in relation to Kelly et al.

The duration of untreated illness had a role in prediction of violence. More the duration of untreated illness (2.6 years) more the violence in comparison to non-violent group(0.98 years)

41 out of the total 100 patients were not married which was almost equal in both groups but among the 10 separated- 9 were from violent group which was significant. It can be due to the fact that those who are violent might have shown it to their spouse and separation may be a result of violence rather than violence being result of separation.

Education of the patient was not much different among the 2 groups but illiterate were more in the non-violent group. Violent group were educated than non-violent group showing the vulnerability that education might stimulate the aggression button.

According to Milton et al,2001 unemployed were more aggressive in all stages- before onset of illness as well as after onset and treatment. In this study, non-violent group were more unemployed(76%) than

violent group (46%) which was more significant. This result may be due to the reason that there might be stressors at workplace or the person feels much stress at home or neighbourhood after work hours that he ends up committing one or the other forms of violent act.

47 out of 100 had come from rural areas but there was no difference based on rural-urban division. Though there is rich inflow from both rural and urban areas to the hospital, people attending outpatient department from the nearby urban region come alone without attender.

Place of residence was studied to look for number of homeless people committing violence as well as being victimized. But this factor could not be studied effectively because the homeless were mostly brought by unknown persons or through reception order from magistrate who obviously do not know the information needed and hence excluded from the study.

According to SOHO study for predicting hostility-Compliance to medication and number of hospitalisations are predictors of future hostility. Most of the patients were hospitalized less than 5 times (74%) and there was not many in the more hospitalized group to look for comparison between number of hospitalisations and violence.

Based on subtype of schizophrenia, 94% of the violent group belonged to paranoid subtype and this finding got co-related with study done by link and stueve et al, 1998 which stated that patients with paranoid symptoms like threat of control or override had more violence. 10 among the non-violent group had other types of schizophrenia other than paranoid, catatonic, hebephrenic.

As per IMAI et al, a Japanese study- excitement symptoms, previous history of violence, any modality hallucinations, system of delusions, lack of clarity of speech, symptoms of threat and control override, not living in own home and chronicity of illness correlated much with violence. In this study, Duration of treatment was almost equal in both groups and 69% of the total group had been treated for less than 5 years.

Based on the phase of illness, 48% of the violent group was in active phase, 34% first episode and none of them were under remission. This finding obviously shows that the phase of the illness is an important factor for violence and violence is rare when the patient is in remission phase.

72% of the violent group was within 5 years of illness duration and 66% of non-violent group had duration of 5 years or more. This suggests that as the duration of illness increases violence decreases. But

there are studies showing that though the frequency of violence decreases severity of violence increases.

Compliance was an important factor related with violence as 84% of them had moderate and poor compliance. 88% had good compliance to treatment among the non-violent group. This suggests that violent activities could be kept in check if maintaining them on good compliance.

59% of the sample had family history of schizophrenia, Family history was not significantly different among both groups. Some studies quote that there might be a relation between violence and family history as it is also associated with early onset of illness and being a witness of previously suffering person.

In this study 62% of the violent were victimized and the non-violent group had much low victimisation on comparison. Victimization was an important component studied as there is/ was/ will be a million dollar question resembling the concept of egg first or chicken first- on whether violent people ended up being victimized or victimized people turned violent.

Steinert et al, 2014 looked for predictors of aggression against self and others and stated that aggression against self had highest number of re-hospitalisation with suicidal ideations and aggression against others

had more alcohol abuse, hospitalisations and were mostly male. In this study, suicidal ideations though totally less in the entire sample-25%, they were more common among violent schizophrenics (38%). Violent people may regret their act or show some of their aggression directed against themselves leading to suicidal ideation.

By PANSS estimation, positive scale was co-related with the violent group whereas negative scale and general scale had no difference between the 2 groups.

Using PSYRATS, delusions and hallucinations score was more related with violence which indicates that most of the violence might be as a result of delusions against the target of violence and hallucinations might be due to running commentary type which the patient listens and carries out.

Mean AUDIT score among the violent group was twice than that of non-violent group. As already discussed in review of literature most studies support the notion that the more the alcohol use pattern the more the violence act associated due to disinhibition or changes in affect regulation.

Insight was significantly low in the violent group (negative value for BCIS). This indicates the importance of improving insight in reducing violence.

Violent group was more disabled in comparison to nonviolent group based on WHODAS. But inspite of disability, support system was not different between two groups indicating the good social support system inspite of violent acts by patients in this population setting.

Within the violent group I searched for the target of violence and most of the violence was targeted at the family members and neighbours than the strangers which is an important community related finding to disprove the stigma and fear associated with violence in schizophrenia. Heather L. Stuart, 2001 quoted that most of the violence is directed based upon the duration of illness where the acutely ill target strangers and chronically ill target family members(which was also low-2%). But in our study most of the patients had duration less than 5 years and inspite of that it was family and neighbours who were targeted more.

Previous history of violence was positive in 56% of the violent which indicates the fact that patient causing 1 violent act might end up causing violence repeatedly and frequently over follow-up and hence patients with known history of violence must be concentrated upon to prevent further violence.

Comparing the severity of violence based on MAOS scores was done to check the relation with various factors.

- Males had higher aggression score(28.78) than females(19);
- Education of high school and below(>26.5) had higher aggression score than graduates and postgraduates(<19.25)
- Previous history of violence(30.6) had higher aggression score than those without previous history(23.9)
- Among alcohol users, not dependent and severe dependent (>28.67) had higher aggression score than mild and moderate dependence
- Among the violent group, Pearson correlation matrix between MOAS scores and SSQ score, BCIS score was statistically significant and had negative inverse correlation i.e. Rise in MOAS scores had a corresponding fall in SSQ score and BCIS score
- Among the violent group, Pearson correlation matrix between MOAS scores and Hallucinatory psyrats, delusional psyrats, positive PANSS was statistically significant and had positive direct correlation i.e. Rise in MOAS scores had a corresponding rise in Hallucinatory psyrats, delusional psyrats, positive PANSS score.

CONCLUSIONS

- * Various risk factors other than the disorder factors had significant roles in violence in schizophrenia
 1. Among socio-demographic factors- male sex, employed, divorced had increased risk of violence
 2. Among disease factors- active phase of the illness, higher duration of untreated psychosis, higher number of relapses, poor compliance had increased risk of violence
 3. Among symptom profile- higher PANSS score, higher scores on hallucinatory and delusional PSYRATS had high risk of violence
 4. Among tools used- Alcohol abuse, suicidal ideas, higher victimisation, reduced insight were associated with violence risk
 5. Severity of violence was more with male sex, education, previous history, alcohol- severe dependence and non dependent, low insight, low social support, high positive PANSS score, high PSYRATS score.

LIMITATIONS OF THE STUDY

1. As convenient sampling used- result of our study cannot be generalized.
2. As the general population is not among the sample studied we cannot compare risk between them and schizophrenia patients
3. No proper definitions or measures for both violence and victimisation
4. Scale/ Questionnaire doesn't differentiate violence/ victimisation into mild/moderate/severe
5. Hospital based study

FUTURE RECOMMENDATIONS

1. Studies in the area of violence has a lot to be explored and as discussed- indian studies are very few
2. Studies in violence should be community based as much of the violence goes unnoticed from the community and also comparable non-violent population is difficult in a hospital study.
3. New rating scales with good reliability and validity must come up for picking up violent acts as well as follow-up as current scales do not differentiate mild violent acts from severe.
4. Advanced investigations might be used to look for anatomical area linked with violence which would give deeper understanding.
5. Predictability of violence should improve and studies must be done in those direction to prevent violent acts from happening as well as for helping the patients in a long term basis
6. Other concepts arising like that of victimisation and violence must be studied together and look for cause- effect relationship as this would be a breakthrough.

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ANNEXURES

1. Informed consent form

Title of the study – A STUDY OF RISK FACTORS FOR VIOLENCE IN SCHIZOPHRENIA

Name of the participant: _____

Name of the Principal/Co-Investigator: Dr. DINESH KUMAR R

Name of the Institution: IMH, MMC

Name and address of the sponsor / agency (ies), if any: _____

I, _____ (name of participant), 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 **STUDY OF RISK FACTORS FOR VIOLENCE IN 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, including any native (alternative) treatments.
- (6) 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.
- (7) I hereby give permission to the investigators to release the information obtained from me as result of participation in this study to the regulatory authorities, Government agencies, and ethics committee. I understand that they may inspect my original records.
- (8) I understand that my identity will be kept confidential if my data are publicly presented.
- (9) I have had my questions answered to my satisfaction.
- (10) 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 form, 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 is incompetent):

(Name) _____ (Signature) _____

Date: _____

Name and signature of impartial witness (required for illiterate patients):

(Name) _____ (Signature) _____

Date: _____

Address and contact number of the impartial witness:

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

(Name) _____ (Signature) _____

(Date) _____

SEMI STRUCTURED INTERVIEW SCHEDULE:

Sociodemographic profile

Age

Same as in data

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. SEMI-SKILLED
3. SKILLED

Marital status

1. Never married
2. Married
4. Widowed

INCOME

- 1- <5000
- 2- 5000-10000
- 3- 10000-15000
- 4- 15000-20000

URBAN/RURAL

- 1- **RURAL**
- 2- **SEMI-URBAN**
- 3- **3. URBAN**

HOME/OUTSIDE

- 1- **OWN HOME**
- 2- **RELATIVE**
- 3- **NEIGHBOURHOOD**
- 4- **HOMELESS**

AGE OF ONSET

- 1 - 20-25
- 2-26-30
- 3-31-35
- 4-36-40
- 5-41-45
- 6-46-50

UNTREATED DURATION(DUP)

NO= NO OF YRS UNTREATED

COMPLIANCE

- 1- **GOOD**
- 2- **MODERATE**
- 3- **POOR**

Disease characteristics

Duration of illness

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

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 hospitalizations

1. <5
2. >5

Subtype of schizophrenia

1. Paranoid
2. Catatonic
3. Hebephrenic
4. others

PREV H/O VIOLENCE

1. YES
2. NO

TARGETS OF VIOLENCE

- F - FAMILY
- N – Neighbour
- S – Strangers

PSYRATS

A Auditory hallucinations

1 Frequency

- 0 Voices not present or present less than once a week
- 1 Voices occur for at least once a week
- 2 Voices occur at least once a day
- 3 Voices occur at least once a hour
- 4 Voices occur continuously or almost continuously i.e. stop for only a few seconds or minutes

2 Duration

- 0 Voices not present
- 1 Voices last for a few seconds, fleeting voices
- 2 Voices last for several minutes
- 3 Voices last for at least one hour
- 4 Voices last for hours at a time

3 Location

- 0 No voices present
- 1 Voices sound like they are inside head only
- 2 Voices outside the head, but close to ears or head. Voices inside the head may also be present
- 3 Voices sound like they are inside or close to ears and outside head away from ears
- 4 Voices sound like they are from outside the head only

4 Loudness

- 0 Voices not present
- 1 Quieter than own voice, whispers.
- 2 About same loudness as own voice
- 3 Louder than own voice
- 4 Extremely loud, shouting

5 Beliefs re-origin of voices

- 0 Voices not present
- 1 Believes voices to be solely internally generated and related to self
- 2 Holds < 50% conviction that voices originate from external causes
- 3 Holds ~ 50% conviction (but < 100%) that voices originate from external causes
- 4 Believes voices are solely due to external causes (100% conviction)

6 Amount of negative content of voices

- 0 No unpleasant content
- 1 Occasional unpleasant content (< 10%)
- 2 Minority of voice content is unpleasant or negative (< 50%)
- 3 Majority of voice content is unpleasant or negative (> 50%)
- 4 All of voice content is unpleasant or negative

7 Degree of negative content

- 0 Not unpleasant or negative
- 1 Some degree of negative content, but not personal comments relating to self or family e.g. swear words or comments not directed to self, e.g. 'the milkman's ugly'
- 2 Personal verbal abuse, comments on behavior e.g. ' shouldn't do that or say that ,
- 3 Personal verbal abuse relating to self-concept e.g. 'you're lazy, ugly, mad, perverted ,
- 4 Personal threats to self e.g. threats to harm self or family, extreme instructions or commands to harm self or others

8 Amount of distress

- 0 Voices not distressing at all
- 1 Voices occasionally distressing, majority not distressing (< 10%)
- 2 Minority of voices distressing (< 50%)
- 3 Majority of voices distressing, minority not distressing (~ 50%)
- 4 Voices always distressing

9 Intensity of distress

- 0 Voices not distressing at all
- 1 Voices slightly distressing
- 2 Voices are distressing to a moderate degree
- 3 Voices are very distressing, although subject could feel worse
- 4 Voices are extremely distressing, feel the worst he/she could possibly feel

10 Disruption to life caused by voices

- 0 No disruption to life, able to maintain social and family relationships (if present)
- 1 Voices causes minimal amount of disruption to life e.g. interferes with concentration although able to maintain daytime activity and social and family relationships and be able to maintain independent living without support
- 2 Voices cause moderate amount of disruption to life causing some disturbance to daytime activity and/or family or social activities. The patient is not in hospital although may live in supported accommodation or receive additional help with daily living skills
- 3 Voices cause severe disruption to life so that hospitalisation is usually necessary . The patient is able to maintain some daily activities, self-care and relationships while in hospital. The patient may also be in supported accommodation but experiencing severe disruption of life in terms of activities, daily living skills and/or relationships
- 4 Voices cause complete disruption of daily life requiring hospitalization. The patient is

unable to maintain any daily activities and social relationships. Self-care is also severely disrupted.

11 Controllability of voices

- 0 Subject believes they can have control over the voices and can always bring on or dismiss them at will
- 1 Subject believes they can have some control over the voices on the majority of occasions
- 2 Subject believes they can have some control over their voices approximately half of the time
- 3 Subject believes they can have some control over their voices but only occasionally. The majority of the time the subject experiences voices which are uncontrollable
- 4 Subject has no control over when the voices occur and cannot dismiss or bring them on at all

B Delusions

1 Amount of preoccupation with delusions

- 0 No delusions, or delusions which the subject thinks about less than once a week
- 1 Subject thinks about beliefs at least once a week
- 2 Subject thinks about beliefs at least once a day
- 3 Subject thinks about beliefs at least once an hour
- 4 Subject thinks about delusions continuously or almost continuously

2 Duration of preoccupation with delusions

- 0 No delusions
- 1 Thoughts about beliefs last for a few seconds, fleeting thoughts
- 2 Thoughts about delusions last for several minutes
- 3 Thoughts about delusions last for at least 1 hour
- 4 Thoughts about delusions usually last for hours at a time

3 Conviction

- 0 No conviction at all
- 1 Very little conviction in reality of beliefs, < 10%
- 2 Some doubts relating to conviction in beliefs, between 10-49%
- 3 Conviction in belief is very strong, between 50-99 %
- 4 Conviction is 100 %

4 Amount of distress

- 0 Beliefs never cause distress
- 1 Beliefs cause distress on the minority of occasions
- 2 Beliefs cause distress on < 50% of occasions

- 3 Beliefs cause distress on the majority of occasions when they occur between 50-99% of time
- 4 Beliefs always cause distress when they occur

5 Intensity of distress

- 0 No distress
- 1 Beliefs cause slight distress
- 2 Beliefs cause moderate distress
- 3 Beliefs cause marked distress
- 4 Beliefs cause extreme distress, could not be worse

6 Disruption to life caused by beliefs

- 0 No disruption to life, able to maintain independent living with no problems in daily living skills. Able to maintain social and family relationships (if present)
- 1 Beliefs cause minimal amount of disruption to life, e.g. interferes with concentration although able to maintain daytime activity and social and family relationships and be able to maintain independent living without support
- 2 Beliefs cause moderate amount of disruption to life causing some disturbance to daytime activity and/or family or social activities. The patient is not in hospital although may live in supported accommodation or receive additional help with daily living skills
- 3 Beliefs cause severe disruption to life so that hospitalisation is usually necessary. The patient is able to maintain some daily activities, self-care and relationships while in hospital. The patient may be also be in supported accommodation but experiencing severe disruption of life in terms of activities, daily living skills and/or relationships
- 4 Beliefs cause complete disruption of daily life requiring hospitalization. The patient is unable to maintain any daily activities and social relationships. Self-care is also severely disrupted

THE MODIFIED OVERT AGGRESSION SCALE (MOAS)

INSTRUCTIONS

Rate the patient's aggressive behavior over the past week. Select as many items as are appropriate.

Refer to the pocket guide for the full measure.

SCORING

1. Add items in each category
2. In scoring summary, multiply sum by weight and add weighted sums for total weighted score. Use this score to track changes in level of aggression over time.

Verbal aggression

- 0** No verbal Aggression
- 1** Shouts angrily, curses mildly, or makes personal insults
- 2** Curses viciously, is severely insulting, has temper outbursts
- 3** Impulsively threatens violence toward others or self
- 4** Threatens violence toward others or self repeatedly or deliberately

SUM VERBAL AGGRESSION SCORE

Aggression against Property

- 0** No aggression against property
- 1** Slams door, rips clothing, urinates on floor
- 2** Throws objects down, kicks furniture, defaces walls
- 3** Breaks objects, smashes windows
- 4** Sets fires, throws objects dangerously

SUM PROPERTY AGGRESSION SCORE

Autoaggression

- 0** No autoaggression
- 1** Picks or scratches skin, pulls hair out, hits self (without injury)
- 2** Bangs head, hits fists into walls, throws self onto floor
- 3** Inflicts minor cuts, bruises, burns, or welts on self
- 4** Inflicts major injury on self or makes a suicide attempt

SUM AUTOAGGRESSION SCORE

Physical Aggression

0 No physical aggression

1 Makes menacing gestures, swings at people, grabs at clothing

2 Strikes, pushes, scratches, pulls hair of others (without injury)

3 Attacks others, causing mild injury (bruises, sprain, welts, etc.)

4 Attacks others, causing serious injury

SUM PHYSICAL AGGRESSION SCORE

CATEGORY SUM SCORE WEIGHTS WEIGHTED SUM

Verbal Aggression x 1

Aggression against Property x 2

Autoaggression x 3

Physical Aggression x 4

Total Weighted Score

The Alcohol Use Disorders Identification Test: Interview Version

1. How often do you have a drink containing alcohol?
 - (0) Never [Skip to Qs 9-10]
 - (1) Monthly or less
 - (2) 2 to 4 times a month
 - (3) 2 to 3 times a week
 - (4) 4 or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
 - (0) 1 or 2
 - (1) 3 or 4
 - (2) 5 or 6
 - (3) 7, 8, or 9
 - (4) 10 or more

3. How often do you have six or more drinks on one occasion?
 - (0) Never
 - (1) Less than monthly
 - (2) Monthly
 - (3) Weekly
 - (4) Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?
 - (0) Never
 - (1) Less than monthly
 - (2) Monthly
 - (3) Weekly
 - (4) Daily or almost daily

5. How often during the last year have you failed to do what was normally expected from you because of drinking?
 - (0) Never
 - (1) Less than monthly
 - (2) Monthly
 - (3) Weekly
 - (4) Daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
 - (0) Never
 - (1) Less than monthly
 - (2) Monthly
 - (3) Weekly
 - (4) Daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

- (0) Never
- (1) Less than monthly
- (2) Monthly
- (3) Weekly
- (4) Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

- (0) No
- (2) Yes, but not in the last year
- (4) Yes, during the last year

10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?

- (0) No
- (2) Yes, but not in the last year
- (4) Yes, during the last year

Skip to Questions 9 and 10 if Total Score

for Questions 2 and 3 = 0

Record total of specific items here

PANSS RATING FORM

		<u>absent</u>	<u>minimal</u>	<u>mild</u>	<u>moderate</u>	<u>moderate severe</u>	<u>severe</u>	<u>extreme</u>
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

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)

WHODAS

		Very good	Good	Moderate	Bad	Very Bad
H1	How do you rate your <u>overall health in the past 30 days?</u>					
In the last 30 days <u>how much difficulty did you have in:</u>						
		None	Mild	Moderate	Severe	Extreme /Cannot Do
S1	<u>Standing for 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 a 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 been 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	<u>Concentrating</u> on doing something for <u>ten minutes</u> ?	1	2	3	4	5
S7	<u>Walking a long distance</u> such as a <u>kilometre</u> [or equivalent]?	1	2	3	4	5
S8	<u>Washing your whole body</u> ?	1	2	3	4	5
S9	Getting <u>dressed</u> ?	1	2	3	4	5
S10	<u>Dealing with people you do not know</u> ?	1	2	3	4	5
S11	<u>Maintaining a friendship</u> ?	1	2	3	4	5
S12	Your day to day <u>work</u> ?	1	2	3	4	5

VICTIMISATION QUESTIONNAIRE

1. Physical assault
2. Bullying and teasing,
3. Assault by weapons with or without injury;
4. Sexual assault/ rape/ harassment;
5. Child maltreatment
6. Property robbery/ vandalism;
7. Witness of a major traumatic event in deciding whether person
victimized or not

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 say?
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 feel would help if a family member very close to you died?
19. Who accepts you totally, including both your worst and your best points?
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-the dumps?
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?

Violent.non violent	AGE	Agegroup	SEX	MARITAL	EDUCATION	OCCUPAT	SES	RELIGION	INCOME	URB/RUR	place of res	ONSETAGE	NO.HOSP	SUBTYPES	Durn.TREAT	PHASEILL
Violent group	29	21 to 30 years	Female	Never married	Post-Graduate	Semi-skilled	Middle SES	Hindu	10000 - 15000	Semi-urban	Own home	20 to 25	< 5	Paranoid	< 5 years	Active
Violent group	38	31 to 40 years	Female	Married	High school	Unemployed	Low SES	Hindu	<5000	Semi-urban	Neighbourhood	26 to 30	> 5	Paranoid	> 5 years	Active
Violent group	31	31 to 40 years	Male	Never married	High school	Unemployed	Low SES	Hindu	5000 to 10000	Semi-urban	Relative	26 to 30	< 5	Paranoid	< 5 years	Relapse
Violent group	31	31 to 40 years	Male	Married	Illiterate	Unemployed	Low SES	Hindu	5000 to 10000	Semi-urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	38	31 to 40 years	Male	Married	Below High school	Unemployed	Low SES	Hindu	5000 to 10000	Rural	Own home	31 to 35	< 5	Paranoid	< 5 years	Relapse
Violent group	43	41 to 50 years	Male	Never married	Below High school	Semi-skilled	Middle SES	Hindu	<5000	Rural	Own home	31 to 35	> 5	Paranoid	> 5 years	Relapse
Violent group	28	21 to 30 years	Male	Never married	Below High school	Semi-skilled	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	32	31 to 40 years	Male	Separated	Illiterate	Unemployed	Low SES	Muslim	<5000	Urban	Own home	26 to 30	< 5	Paranoid	< 5 years	First episode
Violent group	33	31 to 40 years	Male	Separated	Below High school	Semi-skilled	Middle SES	Hindu	<5000	Rural	Relative	26 to 30	< 5	Paranoid	< 5 years	First episode
Violent group	35	31 to 40 years	Male	Never married	High school	Unemployed	Low SES	Hindu	5000 to 10000	Semi-urban	Relative	26 to 30	< 5	Paranoid	< 5 years	First episode
Violent group	28	21 to 30 years	Male	Never married	Below High school	Unemployed	Low SES	Hindu	<5000	Urban	Relative	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	32	31 to 40 years	Male	Never married	Below High school	Semi-skilled	Low SES	Hindu	<5000	Semi-urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	39	31 to 40 years	Male	Separated	High school	Semi-skilled	Low SES	Hindu	<5000	Semi-urban	Relative	26 to 30	< 5	Hebephrenic	< 5 years	Active
Violent group	28	21 to 30 years	Male	Never married	High school	Unemployed	Low SES	Hindu	<5000	Urban	Own home	20 to 25	> 5	Hebephrenic	< 5 years	First episode
Violent group	34	31 to 40 years	Male	Married	Illiterate	Semi-skilled	Middle SES	Hindu	10000 - 15000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	Active
Violent group	38	31 to 40 years	Male	Widowed	High school	Skilled	Middle SES	Christian	10000 - 15000	Urban	Relative	20 to 25	> 5	Paranoid	> 5 years	Active
Violent group	43	41 to 50 years	Male	Married	High school	Semi-skilled	Low SES	Hindu	5000 to 10000	Semi-urban	Own home	31 to 35	> 5	Paranoid	> 5 years	Relapse
Violent group	44	41 to 50 years	Male	Separated	Below High school	Unemployed	Low SES	Hindu	<5000	Rural	Relative	31 to 35	> 5	Paranoid	> 5 years	Relapse
Violent group	35	31 to 40 years	Male	Separated	Below High school	Semi-skilled	Low SES	Christian	<5000	Rural	Neighbourhood	26 to 30	> 5	Hebephrenic	< 5 years	Relapse
Violent group	27	21 to 30 years	Male	Never married	Below High school	Semi-skilled	Low SES	Hindu	5000 to 10000	Rural	Relative	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	30	21 to 30 years	Female	Married	Graduate	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	49	41 to 50 years	Male	Widowed	Illiterate	Unemployed	Low SES	Hindu	<5000	Rural	Neighbourhood	31 to 35	> 5	Paranoid	> 5 years	Active
Violent group	32	31 to 40 years	Male	Never married	Illiterate	Unemployed	Low SES	Hindu	<5000	Urban	Relative	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	29	21 to 30 years	Female	Never married	High school	Semi-skilled	Middle SES	Hindu	5000 to 10000	Urban	Own home	26 to 30	< 5	Paranoid	< 5 years	First episode
Violent group	34	31 to 40 years	Male	Married	High school	Semi-skilled	Low SES	Christian	5000 to 10000	Rural	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	30	21 to 30 years	Male	Married	Below High school	Unemployed	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	26	21 to 30 years	Male	Never married	Illiterate	Semi-skilled	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	43	41 to 50 years	Female	Widowed	Illiterate	Semi-skilled	Low SES	Hindu	<5000	Rural	Own home	26 to 30	> 5	Paranoid	> 5 years	Relapse
Violent group	44	41 to 50 years	Male	Never married	Graduate	Skilled	Low SES	Hindu	10000 - 15000	Rural	Own home	31 to 35	< 5	Paranoid	> 5 years	Active
Violent group	46	41 to 50 years	Female	Separated	Graduate	Skilled	Middle SES	Christian	15000 - 20000	Semi-urban	Own home	31 to 35	< 5	Paranoid	> 5 years	First episode
Violent group	36	31 to 40 years	Male	Married	Illiterate	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	20 to 25	> 5	Paranoid	> 5 years	Relapse
Violent group	38	31 to 40 years	Male	Married	Below High school	Semi-skilled	Low SES	Hindu	5000 to 10000	Semi-urban	Own home	26 to 30	< 5	Paranoid	< 5 years	First episode
Violent group	45	41 to 50 years	Female	Widowed	Below High school	Unemployed	Low SES	Christian	<5000	Semi-urban	Neighbourhood	20 to 25	> 5	Paranoid	> 5 years	Active
Violent group	34	31 to 40 years	Male	Separated	Illiterate	Unemployed	Low SES	Muslim	<5000	Rural	Relative	26 to 30	> 5	Paranoid	> 5 years	Active
Violent group	32	31 to 40 years	Male	Never married	Illiterate	Unemployed	Low SES	Christian	5000 to 10000	Semi-urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	38	31 to 40 years	Female	Widowed	Illiterate	Unemployed	Low SES	Hindu	<5000	Urban	Relative	26 to 30	> 5	Paranoid	> 5 years	Relapse
Violent group	30	21 to 30 years	Male	Never married	Below High school	Semi-skilled	Middle SES	Hindu	5000 to 10000	Rural	Relative	20 to 25	< 5	Paranoid	< 5 years	Active
Violent group	34	31 to 40 years	Male	Never married	Below High school	Semi-skilled	Low SES	Hindu	<5000	Rural	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	36	31 to 40 years	Male	Married	High school	Semi-skilled	Middle SES	Hindu	10000 - 15000	Semi-urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	30	21 to 30 years	Male	Separated	Illiterate	Unemployed	Low SES	Hindu	<5000	Rural	Relative	20 to 25	> 5	Paranoid	> 5 years	Active
Violent group	24	21 to 30 years	Male	Never married	Illiterate	Unemployed	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	31	31 to 40 years	Male	Never married	Below High school	Unemployed	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	Active
Violent group	30	21 to 30 years	Male	Never married	High school	Unemployed	Low SES	Hindu	<5000	Urban	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	34	31 to 40 years	Female	Married	Post-Graduate	Skilled	Middle SES	Hindu	10000 - 15000	Urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	30	21 to 30 years	Male	Married	High school	Semi-skilled	Middle SES	Hindu	5000 to 10000	Semi-urban	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	28	21 to 30 years	Male	Never married	Graduate	Skilled	Middle SES	Hindu	5000 to 10000	Urban	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
Violent group	33	31 to 40 years	Male	Married	Below High school	Unemployed	Low SES	Hindu	<5000	Semi-urban	Relative	26 to 30	< 5	Paranoid	< 5 years	Active
Violent group	35	31 to 40 years	Male	Separated	High school	Semi-skilled	Low SES	Hindu	<5000	Semi-urban	Neighbourhood	20 to 25	< 5	Paranoid	< 5 years	Active
Violent group	45	41 to 50 years	Female	Widowed	High school	Semi-skilled	Middle SES	Hindu	<5000	Urban	Own home	31 to 35	> 5	Paranoid	> 5 years	Active
Violent group	31	31 to 40 years	Male	Married	Illiterate	Semi-skilled	Low SES	Hindu	<5000	Urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Active
n-violent group	21	21 to 30 years	Male	Never married	Below High school	Skilled	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Others	< 5 years	First episode

n-violent gr	23	21 to 30 years	Female	Married	High school	Unemployed	Low SES	Christian	5000 to 10000	Semi-urban	Own home	20 to 25	< 5	Paranoid	< 5 years	Active
n-violent gr	24	21 to 30 years	Female	Married	High school	Skilled	Low SES	Hindu	<5000	Semi-urban	Own home	26 to 30	< 5	Others	< 5 years	Active
n-violent gr	24	21 to 30 years	Male	Never married	High school	Unemployed	Low SES	Christian	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	Active
n-violent gr	30	21 to 30 years	Male	Never married	Below High school	Unemployed	Low SES	Hindu	5000 to 10000	Rural	Own home	26 to 30	< 5	Others	< 5 years	First episode
n-violent gr	31	31 to 40 years	Male	Never married	Graduate	Semi-skilled	Middle SES	Hindu	<5000	Rural	Own home	26 to 30	< 5	Paranoid	< 5 years	First episode
n-violent gr	31	31 to 40 years	Male	Married	Below High school	Skilled	Low SES	Hindu	5000 to 10000	Semi-urban	Own home	26 to 30	< 5	Paranoid	> 5 years	Relapse
n-violent gr	31	31 to 40 years	Male	Married	Graduate	Semi-skilled	Low SES	Hindu	<5000	Rural	Own home	20 to 25	> 5	Paranoid	> 5 years	Remission
n-violent gr	33	31 to 40 years	Male	Married	Illiterate	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	20 to 25	> 5	Hebephrenic	> 5 years	Remission
n-violent gr	34	31 to 40 years	Female	Widowed	Below High school	Unemployed	Middle SES	Hindu	5000 to 10000	Rural	Relative	20 to 25	< 5	Paranoid	> 5 years	Relapse
n-violent gr	34	31 to 40 years	Male	Never married	Graduate	Semi-skilled	Middle SES	Hindu	10000 - 15000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
n-violent gr	34	31 to 40 years	Female	Married	High school	Unemployed	Low SES	Hindu	<5000	Rural	Own home	26 to 30	< 5	Others	< 5 years	First episode
n-violent gr	34	31 to 40 years	Female	Never married	High school	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	26 to 30	< 5	Others	< 5 years	First episode
n-violent gr	34	31 to 40 years	Female	Never married	Below High school	Unemployed	Low SES	Christian	<5000	Urban	Own home	20 to 25	> 5	Paranoid	> 5 years	Relapse
n-violent gr	36	31 to 40 years	Female	Married	High school	Unemployed	Low SES	Hindu	<5000	Rural	Own home	26 to 30	> 5	Paranoid	> 5 years	Remission
n-violent gr	36	31 to 40 years	Female	Married	Illiterate	Unemployed	Low SES	Muslim	<5000	Rural	Own home	26 to 30	> 5	Paranoid	> 5 years	Remission
n-violent gr	36	31 to 40 years	Female	Married	Illiterate	Unemployed	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	Relapse
n-violent gr	37	31 to 40 years	Female	Married	Below High school	Unemployed	Middle SES	Muslim	5000 to 10000	Rural	Own home	26 to 30	< 5	Paranoid	> 5 years	Remission
n-violent gr	40	31 to 40 years	Male	Never married	Illiterate	Unemployed	Low SES	Hindu	<5000	Semi-urban	Relative	31 to 35	< 5	Paranoid	< 5 years	Active
n-violent gr	40	31 to 40 years	Female	Widowed	Below High school	Semi-skilled	Low SES	Christian	<5000	Rural	Relative	31 to 35	< 5	Paranoid	< 5 years	First episode
n-violent gr	43	41 to 50 years	Female	Married	High school	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	31 to 35	> 5	Paranoid	> 5 years	Remission
n-violent gr	47	41 to 50 years	Male	Married	Illiterate	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Remission
n-violent gr	35	31 to 40 years	Female	Widowed	Illiterate	Unemployed	Middle SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	Remission
n-violent gr	38	31 to 40 years	Female	Married	Illiterate	Unemployed	Middle SES	Hindu	<5000	Rural	Own home	20 to 25	> 5	Paranoid	< 5 years	Active
n-violent gr	44	41 to 50 years	Female	Married	High school	Unemployed	Low SES	Hindu	<5000	Rural	Own home	26 to 30	> 5	Paranoid	> 5 years	Remission
n-violent gr	24	21 to 30 years	Male	Never married	Below High school	Unemployed	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Others	< 5 years	First episode
n-violent gr	36	31 to 40 years	Male	Never married	Illiterate	Unemployed	Low SES	Hindu	<5000	Semi-urban	Neighbourhood	20 to 25	< 5	Paranoid	< 5 years	Active
n-violent gr	38	31 to 40 years	Male	Married	Illiterate	Unemployed	Low SES	Christian	5000 to 10000	Semi-urban	Own home	26 to 30	< 5	Paranoid	> 5 years	Remission
n-violent gr	24	21 to 30 years	Female	Married	Illiterate	Unemployed	Low SES	Hindu	5000 to 10000	Rural	Relative	20 to 25	< 5	Paranoid	< 5 years	First episode
n-violent gr	30	21 to 30 years	Male	Never married	Below High school	Unemployed	Low SES	Hindu	5000 to 10000	Rural	Own home	20 to 25	< 5	Paranoid	> 5 years	Active
n-violent gr	39	31 to 40 years	Female	Widowed	Illiterate	Unemployed	Middle SES	Hindu	<5000	Rural	Relative	20 to 25	< 5	Paranoid	< 5 years	Remission
n-violent gr	23	21 to 30 years	Female	Married	Illiterate	Unemployed	Low SES	Hindu	<5000	Urban	Own home	20 to 25	< 5	Paranoid	< 5 years	Active
n-violent gr	49	41 to 50 years	Female	Never married	Below High school	Unemployed	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Others	< 5 years	Active
n-violent gr	27	21 to 30 years	Male	Never married	High school	Semi-skilled	Low SES	Hindu	<5000	Semi-urban	Relative	20 to 25	< 5	Paranoid	< 5 years	First episode
n-violent gr	28	21 to 30 years	Male	Married	Illiterate	Skilled	Low SES	Hindu	<5000	Semi-urban	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
n-violent gr	38	31 to 40 years	Female	Married	Illiterate	Unemployed	Middle SES	Hindu	<5000	Rural	Own home	20 to 25	> 5	Paranoid	< 5 years	Active
n-violent gr	43	41 to 50 years	Female	Married	High school	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	20 to 25	> 5	Paranoid	> 5 years	Remission
n-violent gr	28	21 to 30 years	Female	Married	High school	Semi-skilled	Low SES	Hindu	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	Remission
n-violent gr	45	41 to 50 years	Female	Never married	Below High school	Unemployed	Low SES	Hindu	<5000	Urban	Relative	26 to 30	< 5	Others	< 5 years	Active
n-violent gr	36	31 to 40 years	Female	Widowed	Below High school	Semi-skilled	Low SES	Christian	<5000	Rural	Own home	20 to 25	< 5	Paranoid	< 5 years	First episode
n-violent gr	44	41 to 50 years	Male	Never married	Illiterate	Unemployed	Low SES	Hindu	<5000	Urban	Relative	31 to 35	< 5	Paranoid	< 5 years	Active
n-violent gr	43	41 to 50 years	Male	Married	Illiterate	Unemployed	Low SES	Hindu	<5000	Semi-urban	Own home	26 to 30	< 5	Paranoid	< 5 years	Remission
n-violent gr	38	31 to 40 years	Female	Never married	Below High school	Unemployed	Low SES	Hindu	<5000	Semi-urban	Relative	26 to 30	< 5	Others	< 5 years	Active
n-violent gr	34	31 to 40 years	Male	Separated	Illiterate	Unemployed	Low SES	Christian	<5000	Urban	Relative	26 to 30	< 5	Catatonic	> 5 years	Active
n-violent gr	34	31 to 40 years	Male	Never married	Illiterate	Unemployed	Low SES	Hindu	<5000	Urban	Relative	26 to 30	> 5	Paranoid	< 5 years	Active
n-violent gr	34	31 to 40 years	Male	Never married	Graduate	Semi-skilled	Middle SES	Hindu	<5000	Urban	Relative	26 to 30	< 5	Paranoid	< 5 years	First episode
n-violent gr	29	21 to 30 years	Male	Never married	High school	Unemployed	Low SES	Christian	5000 to 10000	Urban	Relative	20 to 25	< 5	Paranoid	< 5 years	Active
n-violent gr	38	31 to 40 years	Male	Never married	Illiterate	Unemployed	Low SES	Christian	<5000	Rural	Own home	20 to 25	< 5	Paranoid	> 5 years	Active
n-violent gr	34	31 to 40 years	Female	Married	Below High school	Unemployed	Low SES	Hindu	<5000	Rural	Relative	26 to 30	< 5	Others	< 5 years	First episode
n-violent gr	44	41 to 50 years	Female	Never married	Below High school	Unemployed	Low SES	Hindu	5000 to 10000	Rural	Own home	31 to 35	< 5	Paranoid	> 5 years	Remission

Durn.ILLNESS	UNTRE ATED	COMPLIANCE	RELAPSE NO	FAMILY	POST.P ANSS	NEG.P ANSS	GEN.PAN SS	HAL.PSYR ATS	DEL.PSYR ATS	AUDIT	MOAS	SUICID E	AUDITGROU P	BCIS	WHODAS	SSQ	VQ	PREVIOL	TARGETS
< 5 years	1	Moderate	2	No	19	11	36	0	10	0	15	N	Nil	1	12	46	No	Yes	Family members
5 to 10 years	3	Poor	5	Yes	15	10	32	9	8	0	17	Y	Nil	6	36	54	Yes	No	Family members
< 5 years	2	Good	3	No	22	14	26	15	10	0	22	N	Nil	-6	28	49	Yes	No	Family members
< 5 years	2	Moderate	3	Yes	25	11	24	25	21	0	30	N	Nil	-1	35	40	No	No	Neighbourhood
< 5 years	4	Poor	3	Yes	20	15	25	19	15	0	30	Y	Nil	-1	33	34	Yes	Yes	Family members
5 to 10 years	6	Poor	6	Yes	22	10	22	21	10	0	30	N	Nil	-2	32	29	No	No	Family members
< 5 years	1	Moderate	1	Yes	18	13	26	16	14	0	31	N	Nil	-3	40	39	Yes	No	stranger
< 5 years	3	Poor	4	Yes	24	12	25	20	10	0	31	N	Nil	-2	24	29	Yes	Yes	Family members
< 5 years	3	Moderate	3	Yes	20	15	30	15	19	0	31	N	Nil	-9	17	34	Yes	No	Neighbourhood
< 5 years	3	Poor	4	No	24	10	28	20	12	0	31	N	Nil	1	32	40	Yes	Yes	Neighbourhood
< 5 years	2	Moderate	3	Yes	25	10	28	26	10	0	32	N	Nil	3	26	29	Yes	No	Family members
< 5 years	3	Moderate	3	Yes	19	14	26	16	12	0	32	N	Nil	-5	30	35	No	No	Neighbourhood
< 5 years	4	Moderate	5	No	25	5	24	22	12	0	32	N	Nil	2	29	34	Yes	No	stranger
< 5 years	1	Good	2	Yes	23	15	40	13	24	0	33	Y	Nil	-1	26	39	No	Yes	stranger
< 5 years	2	Poor	4	Yes	25	12	22	24	11	0	33	Y	Nil	-5	23	30	No	Yes	Family members
5 to 10 years	4	Poor	5	Yes	25	10	38	20	16	0	33	Y	Nil	-4	26	38	Yes	Yes	Family members
5 to 10 years	1	Poor	5	Yes	25	12	25	0	22	0	34	Y	Nil	-2	34	42	Yes	Yes	Family members
5 to 10 years	6	Poor	5	Yes	24	11	24	20	13	0	34	Y	Nil	-4	29	38	Yes	Yes	Family members
< 5 years	4	Poor	5	No	25	18	24	15	10	0	38	Y	Nil	3	12	3	Yes	Yes	Family members
< 5 years	1	Moderate	2	Yes	23	13	27	18	10	0	40	Y	Nil	-7	32	40	Yes	Yes	stranger
< 5 years	3	Moderate	3	Yes	25	14	48	11	13	2	23	N	Nil	2	35	56	Yes	No	Neighbourhood
< 5 years	3	Moderate	3	Yes	20	11	26	14	11	3	18	Y	Nil	1	36	39	No	No	Family members
< 5 years	1	Moderate	4	No	24	21	20	21	18	3	27	N	Nil	2	29	40	Yes	No	Neighbourhood
< 5 years	3	Good	2	No	18	10	30	12	8	4	11	N	Nil	-1	30	48	No	No	Neighbourhood
< 5 years	2	Moderate	3	Yes	35	17	70	21	24	10	19	Y	mild	-2	25	51	Yes	No	Neighbourhood
< 5 years	3	Moderate	4	Yes	16	10	28	0	8	10	28	N	mild	5	35	56	No	Yes	Neighbourhood
< 5 years	1	Moderate	1	Yes	18	11	28	9	4	12	17	Y	mild	2	22	42	No	No	stranger
5 to 10 years	4	Poor	3	Yes	19	10	26	20	15	13	21	Y	mild	-3	29	32	No	No	Family members
5 to 10 years	3	Moderate	6	No	12	27	37	13	0	14	7	Y	moderate	10	18	59	Yes	No	Family members
5 to 10 years	1	Good	2	Yes	26	11	62	22	12	16	22	Y	moderate	4	40	60	No	Yes	Neighbourhood
5 to 10 years	5	Poor	6	Yes	24	10	24	20	14	18	28	N	moderate	1	26	25	Yes	Yes	Family members
< 5 years	3	Moderate	3	No	22	14	28	15	8	20	18	N	moderate	-3	35	50	No	Yes	Neighbourhood
5 to 10 years	3	Moderate	5	Yes	20	12	38	11	15	20	18	Y	moderate	4	36	44	Yes	No	Family members
5 to 10 years	2	Poor	4	Yes	18	24	35	11	4	20	20	N	moderate	1	18	30	Yes	No	Neighbourhood
< 5 years	3	Poor	3	No	24	14	24	18	15	20	25	N	moderate	-3	29	39	Yes	No	stranger
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< 5 years	2	Moderate	2	Yes	32	13	22	18	10	21	30	N	Severe	-7	16	30	No	No	Neighbourhood
< 5 years	3	Moderate	5	No	20	4	26	22	12	21	30	N	Severe	0	24	22	No	No	Neighbourhood
< 5 years	4	Poor	5	Yes	28	12	25	11	16	21	30	N	Severe	0	28	36	Yes	Yes	Neighbourhood
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