**ORIGINAL PAPER**

# Offenders with Schizophrenia: Relationship to Psychopathology

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## Abstract

**Objectives: To study the relationship between psychopathology and characteristics of offenders with schizophrenia. Methods: In this cross sectional study, 70 consecutive offenders with schizophrenia (aged 18-65) admitted to Hospital Bahagia Ulu Kinta within a six-month period were studied. Subjects' psychopathology was assessed using Positive and Negative Syndrome Scale (PANSS). Results: Offenders against person group received treatment at later age (p=0.043) compared to against property and drug or firearm-related offenders groups. Offenders in drug or firearm-related group had significantly higher PANSS negative scores (p=0.015). Unsound mind at the time of offense was significantly associated with high PANSS positive scores (p=0.011) and offenders against person or property groups (p=0.004). Conclusion: Offenders against person had a significantly later age of treatment and probably onset of illness. Unsoundness of mind was significantly associated with positive symptoms and more frequently reported among offenders against person or property. Offenders in drug or firearm-related group were significantly associated with negative symptoms.**

**Keywords: Mentally Ill Offender, Schizophrenia, Positive Symptoms, Negative Symptoms, Unsound Mind**

## Introduction

Forensic psychiatry tends to focus on violent offences against the person, sex offences and substance abuse. This is entirely reasonable as those are the behavioral problems which are more likely to be related to psychiatric disorder. However, to get the matter in perspective it is important to note that such offences account for only a small proportion of crime. Psychiatrists are more likely to deal with violent, sexual and drug offences which account approximately 5% of recognized criminal behavior[1]

Violence among patients with schizophrenia most often occurs during periods of active psychosis. In one study[2], the majority of violent patients (78%) showed evidence of active psychotic symptoms and 55% were abusing substances at the time of violent incident. Mental disorders are neither necessary, nor sufficient causes of violence. Substance abuse appears to be a major

determinant of violence and this is true whether it occurs in the context of a concurrent mental illness or not. Those with substance disorders are major contributors to community violence, perhaps accounting for as much as a third of self-reported violent acts, and seven out of every 10 crimes of violence among mentally disordered offenders[3].

According to the criminal law, committing an act that is socially harmful is not the sole criterion of whether a crime has been committed[4]. Before anybody can be convicted of a crime, the prosecution must prove that whether the accused had carried out an unlawful act or omission has occurred and been carried out (actusrea - criminal act) and also had at the time the state of mind proscribed in relation to that crime (mensrea - criminal intent). In its broad sense, mensrea is synonymous with a person's blameworthiness, or more precisely, those conditions that make a person's violation sufficiently blameworthy to merit the condemnation of criminal conviction. The defense of insanity is based on the absence of mensrea, or guilty mind and it is depends on the mental state of the accused at the time of committing the act (retrospective diagnosis). In the presence of mental disorder may lessen criminal responsibility or negate it completely in the case of legal insanity.

The purpose of this study was to investigate psychopathology among mental offenders with schizophrenia and to study the relationship between psychopathology and soundness of mind. It was hypothesized that offenders against person and property would be significantly associated with positive symptoms and unsoundness of mind.

## Methods

### Subject

This was a cross sectional study conducted in Hospital Bahagia Ulu Kinta (HBUK). Built in 1911, HBUK is the oldest mental institution in Malaysia. It is also the largest with over 2,600 beds in 76 wards covering 544 acres of land in Tanjung Rambutan, a suburb of Ipoh. Seventy consecutive offenders with schizophrenia (aged 18-65) whom were admitted under section 342 Criminal Procedure Code (CPC) within a six-month period (December 2009 to May 2010) were recruited. Subjects were excluded if they had mental retardation or severe communication problems. The study was approved by the Research & Ethics Committee, Universiti Sains Malaysia and Ministry of Health, and written informed consent was obtained from all patients after a full explanation of the procedures of the study.

### Assessment

All mentally ill offenders admitted to the forensic wards and fulfilled the criteria were assessed within the first week of admission. A single researcher (the first author) trained in psychiatric interview and rating scale interviewed all the subjects and administered the test individually.

The Positive and Negative Syndrome Scale (PANSS) scale is a 30-item semi structured clinical interview specifically developed for typological and dimensional assessment of schizophrenia. It has good psychometric properties with coefficients ranging from 0.73 to 0.83 for each of the scale. There are 7 items for PANSS positive scale, 7 items for PANSS negative scale and 16 items for general psychopathology scale. Each items are rated on a 7-point scale (1= absent, 7 extreme). Rating is based upon information related to the past week. Total score for each

group of symptoms were calculated by adding all the scores for the items in each group[5].

Information about the socio-demographic and clinical characteristic of subjects was collected from the medical record. Subject's mental soundness at the time of offense was based on the final forensic report. It would be recorded as unsound if the forensic psychiatrist in-charge was in the opinion that the mentally ill offender was insane at the time of the offense.The defence of insanity in Malaysia is contained in section 84 of Penal Code (Revised 1997) Act 574. Section 84 of Penal Code clearly described about the act of a person of unsound mind. In the section, it was stated that 'nothing is an offence which is done by a person who, at the time of doing it, by reason of unsoundness of mind, is incapable of knowing the nature of the act, or that he is doing what is either wrong or contrary to the law'.

**Statistics**

All the socio-demographic data and clinical characteristic were coded into categorical data except for age, age of first treatment, duration of treatment, duration of illness, number of hospitalization and number of previous offence. Independent t test was used to compare mean between two groups. One way ANOVA test was used if there were more than two independent groups. Pearson correlation test was used to measure the relationship between two numerical variables. All the analyses were done using PASW Statistics version 18 for Windows.

**Results**

Most of the subjects were involved in offence against person (n=34, 48.6%) followed by against property (n=22, 31.4%) and drugs-related offence (n=11, 15.7%). Three (4.3%) subjects were charged under Firearm Act. Table 1 details the socio-demographic and clinical characteristics of the subjects according to the type of offence. Malay constituted 52.9% of all subjects which was representative of Malaysian population at 50%[6]. Majority of the subjects were male (97.1%), single (72.9%), unemployed (41.3%), educated up to secondary level (70%), received oral atypical antipsychotics (51.4%), no previous history of offence (72.9%) and were found to have unsound mind at the time offense (64.3%). Drug or firearm-related offenders had significantly more sound mind at the time of offense compared to the other 2 groups (p=0.004). Offenders against person group significantly had later age of first treatment compared to other 2 groups (p=0.043). The rest of the characteristics were not significantly different between the 3 groups of offenders.

**Table 1.** Characteristics of all subjects and according to types of offence

| | All (n=70) Frequency (%) | Against person (n=34) Frequency (%) | Against property (n=22) Frequency (%) | Drug or firearm-related (n=14) Frequency (%) | *p* |
|---|---|---|---|---|---|
| **Gender** | | | | | |
| Male | 68(97.1) | 32 (94.1) | 22 (100.0) | 14 (100.0) | 0.690† |
| Female | 2(2.9) | 2 (5.9) | 0 | 0 | |
| **Ethnic** | | | | | |
| Malay | 37 (52.9) | 20 (58.8) | 10 (45.5) | 7 (50.0) | 0.471† |
| Chinese | 21 (30.0) | 11 (32.4) | 6 (27.3) | 4 (28.6) | |
| Others | 12 (17.1) | 3 (8.8) | 6 (27.3) | 3 (21.4) | |
| **Marital status** | | | | | |
| Married | 6(8.6) | 4 (11.8) | 1 (4.5) | 1 (7.1) | 0.566† |
| Divorced | 13(18.6) | 4 (11.8) | 5 (22.7) | 4 (28.6) | |
| Single | 51(72.9) | 26 (76.5) | 16 (72.7) | 9 (64.3) | |
| **Employment status** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Fulltime | 13(18.6) | 7 (20.6) | 4 (18.2) | 2 (14.3) | 0.791† |
| Part time | 24(34.3) | 11 (32.4) | 10 (45.5) | 3 (21.4) | |
| Unemployed | 29(41.3) | 14 (41.2) | 7 (31.8) | 8 (57.1) | |
| Others | 4(5.7) | 2 (5.9) | 1 (4.5) | 1 (7.1) | |
| **Educational levels** | | | | | |
| Nil | 4(5.7) | 4 (11.8) | 0 | 0 | 0.484† |
| Primary | 15(21.4) | 6 (17.6) | 6 (27.3) | 3 (21.4) | |
| Secondary | 49(70.0) | 22 (64.7) | 16 (72.7) | 11 (78.6) | |
| Tertiary | 2(2.9) | 2 (5.9) | 0 | 0 | |
| **Route of AP** | | | | | |
| Oral | 53(75.7) | 28 (82.4) | 14 (63.6) | 11 (78.6) | 0.269* |
| Depot | 17(24.3) | 6 (17.6) | 8 (36.4) | 3 (21.4) | |
| **Type of AP** | | | | | |
| Oral typical | 17(24.3) | 10 (29.4) | 3 (13.6) | 4 (28.6) | 0.499† |
| Oral atypical | 36(51.4) | 18 (52.9) | 11 (50) | 7 (50.0) | |
| Combination | 17(24.3) | 6 (17.6) | 8 (36.4) | 3 (21.4) | |
| **History of previous offence** | | | | | |
| Yes | 19(27.1) | 6 (17.6) | 8 (36.4) | 5 (35.7) | 0.221* |
| No | 51(72.9) | 28 (82.4) | 14 (63.6) | 9 (64.3) | |
| **Mental Soundness** | | | | | |
| Sound | 19(27.1) | 11 (32.4) | 4 (18.2) | 10 (71.4) | 0.004* |
| Unsound | 45(64.3) | 23 (67.6) | 18 (81.8) | 4 (28.6) | |
| | **Mean (SD)** | **Mean (SD)** | **Mean (SD)** | **Mean (SD)** | |
| Age (y) | 38.03 (10.01) | 37.97 (10.27) | 37.91 (10.28) | 38.36 (9.66) | 0.991‡ |
| Age of first treatment (y) | 27.59(7.84) | 29.97 (8.82) | 25.09 (5.48) | 25.71 (7.14) | 0.043‡ |
| Duration of treatment (m) | 121.97(108.32) | 93.32 (102.84) | 148.95 (114.38) | 149.14 (100.59) | 0.098‡ |
| Duration of illness (m) | 147.69(106.91) | 124.59 (98.82) | 175.36 (124.64) | 160.29 (94.44) | 0.198‡ |
| No hospitalization | 4.07(6.24) | 3.38 (6.46) | 5.27 (7.52) | 3.86 (2.38) | 0.543‡ |
| No of previous offence | 0.47 (1.14) | 0.32 (0.95) | 0.82 (1.59) | 0.29 (0.47) | 0.227‡ |

*Pearson chi square
† Fisher's exact test
‡one way ANOVA

Table 2 details the relationship of subjects' characteristics with psychopathology. Drug or firearm-related offenders significantly scored higher in PANSS negative subscale compared to the other 2 groups (p=0.015). Unsound mind at the time of offence was significantly associated with higher scores in PANSS positive scores (p=0.011). Other characteristics were not significantly associated with PANSS as shown in Table 3.

**Table 2.** Association with Psychopathology

| | Total PANSS | | Positive PANSS | | Negative PANSS | | General PANSS | |
|---|---|---|---|---|---|---|---|---|
| | **Mean (SD)** | ***p*** | **Mean (SD)** | ***p*** | **Mean (SD)** | ***p*** | **Mean (SD)** | ***p*** |
| **Gender** | | | | | | | | |
| Male | 74.69 (12.15) | 0.895* | 18.31 (4.19) | 0.791* | 15.56 (5.67) | 0.705* | 40.82 (5.82) | 0.786* |
| Female | 73.50 (28.99) | | 17.50 (6.36) | | 14.00 (8.49) | | 42.00(14.14) | |
| **Ethnic** | | | | | | | | |
| Malay | 74.95 (11.66) | 0.742† | 18.86 (4.20) | 0.471† | 15.24 (5.82) | 0.452† | 40.95 (5.87) | 0.883† |
| Chinese | 75.57 (15.60) | | 17.52 (4.69) | | 16.71 (6.06) | | 41.14 (7.16) | |
| Others | 72.17 (8.94) | | 17.83 (3.22) | | 14.25 (4.50) | | 40.08 (4.27) | |
| **Marital status** | | | | | | | | |
| Married | 67.33 (8.12) | 0.298† | 20.00 (4.56) | 0.505† | 10.83 (3.13) | 0.093† | 36.50 (3.08) | 0.093† |
| Divorced | 76.69 (14.04) | | 18.69 (3.57) | | 15.23 (6.87) | | 42.92 (6.25) | |
| Single | 75.00 (12.38) | | 17.98 (4.32) | | 16.14 (5.40) | | 40.84 (5.98) | |
| **Employment status** | | | | | | | | |
| Full time | 72.46 (9.50) | 0.607† | 18.38 (4.52) | 0.495† | 14.23 (4.83) | 0.420† | 39.85 (4.56) | 0.504† |
| Part time | 73.38 (12.31) | | 18.79 (4.44) | | 14.58 (5.38) | | 40.17 (5.15) | |
| Unemployed | 75.86 (14.03) | | 17.52 (3.99) | | 16.83 (5.93) | | 41.38 (7.13) | |
| Other | 80.75 (11.03) | | 20.50 (3.11) | | 15.75 (8.26) | | 44.50 (6.56) | |
| **Educational level** | | | | | | | | |
| Nil | 77.50 (14.39) | 0.279† | 20.50 (3.11) | 0.245† | 16.25 (3.30) | 0.574† | 40.75 (8.62) | 0.258† |
| Primary | 78.73 (11.13) | | 19.80 (3.78) | | 15.93 (5.34) | | 43.00 (5.98) | |
| Secondary | 73.65 (12.57) | | 17.65 (4.24) | | 15.55 (5.99) | | 40.45 (5.75) | |
| Tertiary | 63.00 (14.14) | | 18.00 (7.07) | | 10.00 (2.83) | | 35.00 (4.24) | |
| **Route of AP** | | | | | | | | |
| Oral | 74.11 (12.37) | 0.523* | 18.28 (4.23) | 0.993* | 15.17 (5.50) | 0.374* | 40.62 (6.02) | 0.567* |
| Depot | 76.35 (13.03) | | 18.29 (4.22) | | 16.59 (6.27) | | 41.59 (6.00) | |
| **Type of AP** | | | | | | | | |
| Typical | 77.82 (16.32) | 0.272† | 18.76 (5.07) | 0.852† | 16.06 (6.48) | 0.500† | 43.12 (7.21) | 0.095† |
| Atypical | 72.36 (9.79) | | 18.06 (3.83) | | 14.75 (5.02) | | 39.44 (5.07) | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Combined | 76.35 (13.03) | | 18.29 (4.22) | | 16.59 (6.27) | | 41.59 (6.00) | |
| **Type of offense** | | | | | | | | |
| Against person | 74.71 (14.27) | 0.420† | 18.88 (4.75) | 0.346† | 14.97 (6.22) | **0.015**† | 40.85 (6.72) | 0.734† |
| Against property | 72.41 (8.61) | | 18.23 (3.62) | | 13.95 (3.98) | | 40.23 (4.47) | |
| Drug-related and others | 78.07 (12.98) | | 16.93 (3.74) | | 19.29 (5.23) | | 41.86 (6.47) | |
| **History of offence** | | | | | | | | |
| Yes | 76.53 (11.66) | 0.448* | 19.11 (3.05) | 0.322* | 16.21 (4.70) | 0.535* | 41.21 (6.09) | 0.766* |
| No | 73.96 (12.81) | | 17.98 (4.54) | | 15.25 (6.03) | | 40.73 (6.01) | |
| **Mental soundness** | | | | | | | | |
| Sound | 72.08 (11.93) | 0.200* | 16.60 (3.16) | **0.011*** | 15.60 (5.47) | 0.926* | 39.96 (5.52) | 0.354* |
| Unsound | 76.09 (12.67) | | 19.22 (4.44) | | 15.47 (5.86) | | 41.36 (6.24) | |

*Independent t-test was applied, p value significant at < 0.05

† One way ANOVA test was applied, p value significant at < 0.05

**Table 3.** Correlation between Characteristic of Subjects with Psychopathology

| | Total PANSS | Positive PANSS | Negative PANSS | General PANSS |
|---|---|---|---|---|
| Age | 0.642 | 0.963 | 0.614 | 0.603 |
| Age of first treatment | 0.875 | 0.356 | 0.775 | 0.931 |
| Duration of treatment | 0.832 | 0.299 | 0.346 | 0.758 |
| Duration of illness | 0.424 | 0.741 | 0.266 | 0.396 |
| Number of hospitalization | 0.955 | 0.319 | 0.292 | 0.657 |
| No of previous offence | 0.865 | 0.626 | 0.956 | 0.913 |

## Discussion

The socio-demographic and clinical characteristic of the 3 groups of offenders with schizophrenia were similar except for a few significant differences. Firstly, this study found offenders against person received treatment at a significantly later age when compared to other groups, even though the age, duration of treatment, duration of illness and number of hospitalization were similar. Offenders against person had probably a later onset of illness which can be associated with a higher chance of having schizophrenia of paranoid subtype.

Secondly, unsound mind at the time of offense was significantly associated with positive symptoms but not with negative symptoms or general psychopathology. In other word, presence of positive symptoms in the first week of admission during which the assessment was made significantly associated with the final forensic report that the offender was of unsound mind during the alleged offense.

Unsound mind at the time of offense was also significantly more often among offenders against person (67.6%) and property (81.8%) compared to substance or firearm-related group (28.6%). More than two thirds (67.6%) of offenders against person had unsound mind at the time of offense which suggest positive symptoms such as commanding hallucinations and persecutory delusions may play an important role in violent offending against person. However, no significant association between offense against person with positive symptoms or unsound mind at the time of offense was found in this study. Nevertheless, it is important to control the positive symptoms (particularly delusion, hostility and hallucinatory behaviour) in the long-term management of those mental offenders as they were significantly correlated with the amount of burden experienced by caregivers[7].

Thirdly, higher negative symptoms were significantly associated with offenders in drug or firearm-related group. It was highly probable that the offenders themselves were drug users and if it was used as self medication, it may be aimed particularly toward alleviating negative symptoms such

as social impairment and cognitive deficits. Negative symptoms are associated with reduced verbal working memory[8] and amphetamine has shown to improve working memory accuracy in schizophrenia[9]. By the time of forensic assessment, the drug effects probably have worn off and the subjects were at their baseline negative symptoms. Consistent with finding that amphetamine modestly improved negative symptoms only in patients with schizophrenia in whom this symptomatology was more severe[10].

In conclusion, unsoundness of mind was significantly associated with positive symptoms and violent offenses against person or property. Negative symptoms were significantly more among drug or firearm-related offenders suggesting its use as self- medication.

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