The study of court-ordered forensic psychiatric evaluations for offenders with schizophrenia with homicide charges in Taiwan

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Abstract

Background: Homicidal offenders with schizophrenia who went through psychiatric evaluations is a small but significant group during criminal appeal. However, studies regarding the criminal responsibilities of homicide offenders with specific psychiatric diagnosis such as schizophrenia were rare. Our Aims are to explore the relationship between verdict and type of crime among alleged offenders with schizophrenia in Taiwan. Our hypothesis was that aspects of schizophrenia would be more likely to be taken into account in homicide cases than other alleged offences. Methods: A retrospective comparison of homicide offenders with non-homicide offenders with schizophrenia registered between December 2000 and November 2009 in the web-based, national, open access court verdicts databank. Results: Thirty-three (3.4%) of 9,691 criminal offenders had a diagnosis of schizophrenia. Seventeen (30%) of all evaluatees with schizophrenia had psychiatric comorbidities. Those charged with homicide were significantly more likely to have been found not guilty by reason of insanity NGRI/partially responsible for the crime (4, 64%) than those charged with other offences (9, 30%; p<0.03). The homicide cases were significantly more likely to have been given treatment plans (homicide 18, 55%; others 4, 18.8%; p<0.01). The homicide cases were also likely to have had more evaluations prior to the court hearings than the others, though not significant. (p=.17) Conclusions: The disparity in NGRI/partially responsible for the crime decision between offence groups is of concern in relation to differences in the extent of expert evaluations between the two groups. While it is understandable that, if resources are scarce, more may be allocated to more serious cases, there remains a risk both of injustice and inadequate care and thus public safety in relation to those people with schizophrenia in contact with the criminal justice system who do not get a resultant treatment plan.

Background

Homicides are one of the more serious crimes that are frequently referred for psychiatric evaluations and treatments (Cochrane, Grisso, & Frederick, 2001). The rates of homicides offenders with schizophrenia varies, but were generally small: only 5-6.5% of all homicides were committed by people with schizophrenia (Golenkov, Large, Nielssen, & Tsymbalova, 2011; Large, Smith, & Nielssen,
However, homicide charges predominated all the other charges for schizophrenic offenders: 53.33% of schizophrenic criminal offenders were charged with homicide in Taiwan (Yu et al., 2005). Regarding rates of committing homicide, patients with schizophrenia were higher than general populations. Studies showed a 6.5 to 8-fold increase (Eronen, Tiihonen, & Hakola, 1996), and an odds ratios of 5.85 to 18.38 (Schanda et al., 2004) in men and women, respectively.

Patients with schizophrenia who were charged with homicides were more likely to be associated with substance use disorders, auditory hallucinations, delusional beliefs, previous history of violence, and family history of crimes, in comparison to those with non-homicide charges (El-Hadidy, 2012), and the same group tended to be under influences of substances at the time of the offense (Eronen et al., 1996; Golenkov et al., 2011). One Australian population cohort suggested the risk of committing a homicide were nearly 28 times more in patients with schizophrenia comorbid with substance use disorder than in the general population (Mullen, Burgess, Wallace, Palmer, & Ruschena, 2000). Most of the time, the victims were the families from private residences (Joyal, Putkonen, Paavola, & Tiihonen, 2004). The recidivism rate was high (Golenkov, Nielssen, & Large, 2014), and up to 44% of schizophrenic homicide offenders were determined legally insane (Packer, 1987).

In Taiwan, most forensic psychiatric evaluations were either courts-appointed or prosecutors-appointed before indictment. Criminal responsibilities were frequently asked by the court, but only the court could decide whether the forensic evaluations opinions would be acceptable as an insanity defense (the status as lack of responsibility), or partial responsibility. The evaluations were often done in a hospital. A team composed of two board-certified psychiatrists, or sometimes a senior psychiatric resident under the supervision of a board-certified psychiatrist, often teamed by one clinical psychologist, are appointed by the courts to perform psychiatric diagnostic interviews, mental and physical examinations, psychological assessments, routine laboratory work-ups, and sometimes, brain imaging studies (Kuo, 1983). The forensic psychiatric evaluations often included the mandatory treatment of the accused, nonetheless, the final verdict on the the need for mandatory treatment are
only made by the judges (Ho, Tsuang, Lin, & Rin, 1997; Rin, 1976; Su, Yu, Yang, Tsai, & Chen, 2000; W. C. Tsai, Rin, H, Lin, S.N, 1996; Tzeng et al., 2016; Wang et al., in press; Yu et al., 2005). Most of the mandatory treatments are provided by the conventional hospitals, psychiatric clinics, and these facilities are contracted to provide scheduled visits to the offenders with the court or prosecutors’ offices (Tzeng et al., 2017; Wu et al., 2017; Yang, 2008), instead of government-sponsored, profession forensic mental hospitals.

Studies regarding the criminal responsibilities of homicide offenders with specific psychiatric diagnosis such as schizophrenia were rare. We hypothesize that criminal behaviors (type of crimes committed) or other characteristics of offenders with schizophrenia were associated with the final criminal responsibilities. Therefore, this study aims to compare criminal responsibilities, as well as further clinical management, between homicide and non-homicide schizophrenic offenders.

Methods
Study design
This retrospective study was conducted to compare the different characters between homicide and non-homicide schizophrenic criminal offenders, and the different characters between these offenders with single or repeated evaluations.

Data sources
Full copies of court verdicts were obtained by reviewing publicly available judicial decision documents retrieved from the document-bank set up and maintained by the Judicial Yuan in Taiwan in 2000-2009. A computerized screening was used to search for criminal verdicts with the key words “schizophrenia & forensic psychiatric evaluation”. The reviewing of each verdict was done by two forensic psychiatrists, one neurologist, and one clinical psychologist from the authors. The purpose is to look for criminals with schizophrenia and also had the results of the forensic evaluations mentioned in the verdict. Out of the 4,484 hits, 55 offenders were authorized by the authors confirming that they were schizophrenic criminal offenders who went through psychiatric evaluation. The same case who
went through multiple evaluations during appealing process or mentioned in different verdicts could easily be noted though the system and calculated as one single data. A computerized screening was used to search for criminal verdicts with the key words “homicides” from December, 2000, to November, 2009, and 9,691 hits were found.

Ethics
This study was conducted in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki). The Institute Review Board of the Tri-Service General Hospital approved this study (No. 2-102-05-044).

Measurements
All individuals included in the study were identified as patients with schizophrenia, using the DSM-IV-TR criteria, as well as other comorbid psychiatric disorders on the written sentence databank (American Psychiatric Association, 2004). A full forensic psychiatric examination in Taiwan often includes psychiatric interviews, physical and neurologic examinations, mental status and psychological evaluations, electroencephalographic (EEG) studies, and, if indicated, neuro-imaging tests.

Statistical analysis
All the schizophrenic criminal offenders were categorized according to type of offences as those with homicide charges and those with non-homicide ones. (Table 1) Among those with homicide charges, there were people committed and those who attempted homicide as well as those who went through repeated evaluations and those who had single evaluation. We further categorized them (Table 2 and 3). The groups were compared and tested for significant differences in gender, diagnosis, forensic psychiatric opinions, the latest court decision on legal responsibility, hospitals for the forensic psychiatric evaluations, the judges’ acceptance of the forensic psychiatrists’ opinions on legal responsibility, and further treatment or correction after penalty, were made using the chi-square test.
and Fisher's exact test. Also during analysis, we divided our cases by times of evaluation, with the statistical significance set at $p < 0.05$. 

Results

There were 33 in homicide group and 22 in non-homicide. Of all the homicide offenders, 9 were charged as attempted homicide. Demographic data as well as other characteristics during legal appeal are listed on Table 1. Males were predominant in both groups. The crimes committed were mostly felony in the non-homicide groups. Among all the subjects, about 30% were recorded with comorbidities, which were substance use (18.18% for both groups), organic brain syndrome, or a history of traumatic brain injury (6.06% and 4.55% for homicide and non-homicide groups). Two were comorbid with antisocial personality disorder in the homicide groups. Three cases were sent not only for their insanity plea, but also for their competency to stand trial.

Among these offenders, 27.27% and 59.09% were viewed as criminally responsible, for the homicide and non-homicide groups, respectively; while 63.64% and 40.91% were sentenced with diminished responsibility for the homicide and non-homicide groups. Only 9.09% of those with legal insanity were recorded in forensic psychiatric reports opinions for the homicide group. In our study, the judges accepted most expert opinions (93.94% and 86.36%, respectively, for homicide and non-homicide cases), and seldom ordered multiple evaluations. Most of the hospitals where forensic psychiatric evaluations are performed can be found in local community hospitals. Treatment plans along with sentences were mentioned in 54.54% for the homicide group, especially in more recent verdicts.

Significances were found in criminal responsibility ($p = 0.029$) and the treatment plan mentioned in the verdicts ($p = 0.014$) for homicide and non-homicide group (Table 1). For those who committed and attempted homicide, there were no significances found for all the characteristics mentioned above (Table 2).

Those who went through multiple evaluations (9 out of 33 schizophrenic homicide offenders) showed distinct characters in which more cases with psychiatric opinion of no responsibility or partial responsibility were noted ($p < 0.001$). Also, there was a trend toward receiving a sentence of not being responsible for their crime for the group that went through repeated exams ($p = 0.05$) (Table 3).
Discussion
This study is the first to analyze characters of forensic psychiatric evaluatees with a diagnosis of schizophrenia in Taiwan from a web-based, open-accessed court sentences databank. As aforementioned, courts frequently request psychiatrists’ opinions on the criminal responsibilities and treatments for the offenders. Although there were previous reports documenting the consistency between insanity defenses and professional opinions (Yu et al., 2005), we were the first to show that schizophrenic homicide offenders had their distinct characters.
Psychotic disorders are associated with criminal acts such as violence or homicides (Arseneault, Moffitt, Caspi, Taylor, & Silva, 2000; Brennan, Mednick, & Hodgins, 2000; Eronen et al., 1996; Schanda et al., 2004). Evolving diagnostic criteria, comorbid substance use, or antisocial personality trait, and being charged with illegal weapon possession, might greatly influence the processes and results of an insanity plea and forensic evaluations (Eronen et al., 1996). In our study, 60% of schizophrenic criminal offenders were charged with major crimes of homicide, which is consistent with previous report (Yu et al., 2005). Although only a small part in all the homicide cases (3.4%, compared with previous reports of 5-6.5% (Golenkov et al., 2011; Large et al., 2009; Meehan et al., 2006)), they had the significances.
The reports varied regarding the relationship between the criminal charges and the professional opinions on insanity defense or competency to stand trial (Nicholson & Kugler, 1991; Rosenfeld & Ritchie, 1998; Steadman & Hartstone, 1983; J. I. Warren, Rosenfeld, Fitch, & Hawk, 1997). Although the graveness of criminal charges is correlated with criminal responsibility (Cochrane et al., 2001; J. I. Warren, Fitch, Dietz, & Rosenfeld, 1991; Janet I Warren, Murrie, Chauhan, Dietz, & Morris, 2004), one study about pretrial evaluations stated that the psychiatric diagnoses, rather than the severity of the criminal charges, influenced more on the clinical judgments of responsibility (Cochrane et al., 2001). Warren et al., (2004) also agreed that the defendants’ types of diagnosis override the types of offenses in predicting an opinion of insanity. For example, a more serious mental disorder, absence of Axis II diagnosis or substance use, previous psychiatric hospitalizations and not being influenced by drugs at the time of the offense, might have had a more positive relationship with opinions of insanity.
(Janet I Warren et al., 2004). They further explained that the high rates of insanity on certain crime categories could be interpreted as higher rates of psychotic diagnoses being found within them. No significant relationships between the charges and the psycholegal opinion could be noted once the diagnoses were also considered. We found that all of the three cases verdict as criminally insane were murder (two cases), and attempted murder (one case). Although small in size, it is in line with this previous hypothesis.

Moreover, many studies had suggested a negative relationship between substance use and verdicts or psychological opinions on insanity, reflecting the legal responsibility that derives from voluntary intoxication. However, it may reflect the connotation of wrong-doing and, therefore, culpability in instances wherein substances are paired with criminal behavior (Janet I Warren et al., 2004). One study reported that 57.14% of offenders with no criminal responsibility (legal insanity), and 24.59% with diminished responsibility, were verdict to psychiatric treatment (W. C. Tsai, Rin, & Lin, 1996). In this study, only 40% of the subjects were verdict with treatment plans. Hans (1986) stated that the public dislike insanity defense for both wanting the “law breakers” to be punished and thinking that the criminal procedure fails to protect the public, although they often overestimate the use and success of insanity pleas (Hans, 1986). For the effectiveness of the mandated treatments, rate of 1 in 600 patients committing homicide prior to receiving treatment would be reduced to 1 in 10,000 per year after antipsychotic use (Nielssen & Large, 2010).

There were three cases that had received different professional opinions during repeated evaluations. All were charged with homicides. Limited reports were found about the consistency of professional opinions. There were researches suggesting that for grave or notorious crime cases, different psychiatric professionals or incomplete data offered may have resulted in the difficulty of reaching consistency, especially when they had to deal with legal aspects like determining cognitive prong or volitional prong (Chen & Chien, 2003; Janet I Warren et al., 2004; Yu et al., 2005).

There are a number of limitations in this study: some demographic information could not be found in
the public databank. Gender, exact age (although senility was relatively obvious when reviewing the verdicts), level of education, and occupation were not recorded, mostly in the electronic version of verdicts according to the web-based databank’s policy. There were also some sentence documents not released due to administrative omission and concerns for protection of privacy or vulnerable groups. The population in this study may not represent all the psychiatric criminal cases, since most insanity determinations were made by the judges and only 33.75% were accorded with psychiatric evaluations, according to a previous report (Chen & Chien, 2003).

Conclusions
Of all homicide offenders, people who diagnosed with schizophrenia consist a small but significant part. For the schizophrenic criminal offenders, those who committed homicide or attempted homicides had higher rates of court-verdict legal insanity than those with other charges. We also noted that it may be related to higher rate of severe mental illness found in those cases in which a more extensive expert evaluations were ordered. For cases comorbid with substance user personality disorder, which would easily be perceived as having a less severe mental illness, there were tendencies of not reaching a NGRI decision. While more resources might be allocated to more serious cases/mental illness, there remains a risk both of injustice and inadequate care and thus public safety in relation to those people who do not get a resultant treatment plan.

Declarations

Ethics approval and consent to participate
The Institute Review Board of the Tri-Service General Hospital approved this study (No. 2-102-05-044).

Consent for publication
Not applicable

 Availability of data and material
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests
The authors declare no conflicts of interest.

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**Authors' contributions**

Hui-Yi Wang was the major contributor in writing the manuscript. Nian-Sheng Tzeng supervised and examined final result. All authors read and approved the final manuscript. Hsin-An Chang, Yu-Cheng Kao, Chin-Bin Yeh, San-Yuan Huang forming data review team. Yu-Ching Chou and Hui-Wen Yeh, doing data analysis. Wei-Shan Chiang and Li-Yao Tang doing online data gathering.

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### Tables

#### Table 1. Characteristics between offenders with schizophrenia in homicide and non-homicide groups

|                        | Homicides (n=33) | Non-homicide (n=22) |
|------------------------|------------------|---------------------|
|                        | n (%)            | n (%)               |
| **Sex**                |                  |                     |
| Male                   | 31(93.94)        | 20(90.91)           |
| Female                 | 2(6.06)          | 2(9.09)             |
| **Type of offense**    |                  |                     |
| Committed H/M          | 24(72.73)        | --                  |
| Attempted H/M          | 9(27.27)         | --                  |
| Felony                 | --               | 20(90.91)           |
| Not felony             | --               | 2(9.09)             |
| **Comorbidity**        |                  |                     |
| N/A                    | 21(63.64)        | 17(77.27)           |
| Substance              | 6(18.18)         | 4(18.18)            |
|                        | Homicides (n=24) | Attempted homicides (n=9) |
|------------------------|------------------|-------------------------|
|                        | n (%)            | n (%)                   |
| Sex                    |                  |                         |
| Male                   | 23 (95.83)       | 8 (88.89)               |
| Female                 | 1 (4.17)         | 1 (11.11)               |
| Comorbidity            |                  |                         |
| N/A                    | 15 (62.50)       | 6 (66.67)               |
| Substance              | 5 (20.83)        | 1 (11.11)               |

Table 2 Difference between homicide and attempted homicide groups
| Organization | Sub+ Org | Sub+ PD |
|-------------|---------|---------|
| 1(4.17)     | 1(11.11)| 0(0)   |

### Responsibility

| Responsibility | 2(8.33) | 1(11.11) |
|----------------|---------|----------|
| Not responsible|         |          |
| Partially      | 18(75.00)| 3(33.33) |
| Responsible    | 4(16.67) | 5(55.56) |

### Professional opinion

| Professional opinion | 2(8.33) | 1(11.11) |
|----------------------|---------|----------|
| Not responsible      |         |          |
| Partially            | 15(62.50)| 5(55.56) |
| Responsible          | 4(16.67) | 3(33.33) |
| Inconsistent         | 3(12.50) | 0(0)    |

### Acceptance

| Acceptance | 24(100.00)| 7(77.78)|
|------------|----------|--------|
| Times of evaluation |
| Single     | 16(66.67)| 8(88.89)|
| Multiple   | 8(33.33)| 1(11.11)|

### Treatment

| Treatment | 9(37.50)| 6(66.67)|
|-----------|--------|--------|
| No        |        |        |
| Yes       | 13(54.17)| 3(33.33)|
| Mentioned | 2(8.33)| 0(0)   |

### Organizations

| Organizations | n=36 | n=10 |
|---------------|------|------|
| Medical center| 14(38.89)| 1(10.00)|
| Regional hospital| 20(55.56)| 8(80.00)|
| Local hospital | 2(5.56)| 1(10.00)|
Table 3. Difference between offenders with homicides who received one or more than one evaluations

|                             | Single evaluations (n=24) | Multiple evaluations (n=9) |
|-----------------------------|---------------------------|---------------------------|
|                             | n (%)                     | n (%)                     |
| Sex                         |                           |                           |
| Male                        | 23(95.83)                 | 8(88.89)                  |
| Female                      | 1(4.17)                   | 1(11.11)                  |
| Comorbidity                 |                           |                           |
| N/A                         | 16(66.67)                 | 5(55.56)                  |
| Substance                   | 5(20.83)                  | 1(11.11)                  |
| Organic                     | 1(4.17)                   | 1(11.11)                  |
| Personality                 | 2(8.33)                   | 0(0)                      |
| Sub+ Org                    | 0(0)                      | 1(11.11)                  |
| Sub+ PD                     | 0(0)                      | 1(11.11)                  |
| Responsibility              |                           |                           |
| Not responsible             | 0(0)                      | 3(33.33)                  |
| Partially                   | 16(66.67)                 | 5(55.56)                  |
| Responsible                 | 8(33.33)                  | 1(11.11)                  |
| Professional opinion        |                           |                           |
| Not responsible             | 0(0)                      | 3(33.33)                  |
| Partially                   | 18(75.00)                 | 2(22.22)                  |
| Responsible                 | 6(25.00)                  | 1(11.11)                  |
| Inconsistent                 | 0(0)                      | 3(33.33)                  |
| Acceptance                  | 22(91.67)                 | 9(100.00)                 |
| Type of offenses            |                           |                           |
| Committed H/M               | 18(69.23)                 | 8(88.89)                  |
| Treatment                | N=24 | n=22  |
|--------------------------|------|-------|
| Attempted H/M            | 8(30.77) | 1(11.11) |
| No                       | 11(45.83) | 4(44.44) |
| Yes                      | 11(45.83) | 5(55.56) |
| No but mentioned         | 2(8.33) | 0(0) |
| N=24                     |   |       |

| Organizations            | N=24 | n=22  |
|--------------------------|------|-------|
| Medical center           | 5(20.83) | 10(45.45) |
| Regional hospital        | 17(70.83) | 11(50.00) |
| Local hospital           | 2(8.33) | 1(4.55) |

*aChi-square test or Fisher’s exact test*