DEMOGRAPHIC AND HISTORICAL FACTORS IN VIOLENT AND NONVIOLENT

OFFENDERS WITH PSYCHOTIC DISORDERS

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ABSTRACT

The purpose of this study was to explore historical or demographic factors of inmates diagnosed with a psychotic disorder as well as to assess whether any of these factors distinguish violent and nonviolent offenders diagnosed with mental illness. The sample consisted of 73 male inmates who had been released from Oregon Department of Corrections before 2004. Of these, 44 had been convicted of nonviolent crimes and 29 had been convicted of violent crimes. Inmates' institutional and medical files were examined for 18 factors: conviction, arrest record, race, marital status, employment history, highest grade level completed, psychiatric treatment before arrest, inpatient treatment, psychiatric medication history, probation or parole revocation, history of disciplinary reports, age of first crime, age of onset of psychosis, parents' marital status before participant reached the age of 18, history of abuse, history of substance abuse, family history of crime, and violence before the age of 18.

The results of a frequency analysis showed large differences (10% or more) between nonviolent and violent inmates for the following variables: race, marital status, parents' marital status, type of parent/guardian figure present in the childhood home, unemployment 6 months before arrest, age of psychotic onset, revocation of probation or parole, disciplinary reports, and history of violence. A chi square analysis was conducted to determine if there were any significant differences in the variables between violent and nonviolent offenders. There was a significant difference in age of psychotic onset. Inmates in the violent group more often experienced psychotic onset between the ages of

15 to 19 than at younger or older ages, whereas inmates in the nonviolent group more often experienced psychotic onset before the age of 15 and between the ages of 20 to 29.

Keywords: Psychotic disorders, inmates, inmates with psychosis, and violent and nonviolent offenses.

ACKNOWLEDGMENTS

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INTRODUCTION

Criminal behavior among individuals diagnosed with a mental illness is an issue that often arises in the mental health field. Many researchers have found that violence is a common behavior manifested by these individuals, and psychosis specifically is appearing frequently in the criminal justice system (Gillies & O'Brien, 2006; James & Glaze, 2006; Swanson et al., 2006).

A number of researchers have examined differences between individuals with a psychotic disorder and individuals without a psychotic disorder (Hodelet, 2001; Klassen & O'Connor, 1988; Lindqvist & Allebeck, 1990; Nijman et al., 2003). There are also a number of studies examining the differences in demographic and background factors between individuals with a psychotic disorder who engage in violence or criminal behaviors and individuals with a psychotic disorder who do not engage in those behaviors (Angermeyer, 2000; Flannery, Penk, Irvin, & Gallagher, 1998; Swanson et al., 2006; Tengstrom, Hodgins, Grann, Langstrom, & Kullgren, 2004; Walsh et al., 2003; White, Chant, & Whiteford, 2006). To date, however, no researchers have examined whether demographic differences exist between individuals with a psychotic disorder who have committed violent offenses and those who have committed nonviolent offenses.

The purpose of the current study was to assess whether any historical or demographic factors distinguish violent and nonviolent offenders diagnosed with mental illness. Such information may provide insight into the types of interventions that could be

useful for reducing violent and nonviolent offenses in this population. In the following

review of literature, I examine the prevalence of criminal behavior in individuals with

mental illness and psychotic disorders. Also discussed are common factors of individuals

with mental illness or psychotic disorders who have committed offenses. Subsequently, I

outline the rationale and goals for the current study.

REVIEW OF THE LITERATURE

Psychotic Disorders

Psychotic disorders for the purpose of this study included schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, psychotic disorder not otherwise specified (NOS), and mood disorders with psychotic features. Although no definition of psychosis has been accepted universally, the authors of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (*DSM-IV-TR*; American Psychiatric Association [APA], 2000) broadly described psychosis as involving "delusions or prominent hallucinations, with the hallucinations occurring in the absence of insight into their pathological nature" (p. 297). *DSM-IV-TR* criteria for each of the disorders included in this study will be described briefly here.

Schizophrenia is characterized in the *DSM-IV-TR* (APA, 2000) by at least six months of signs of the disorder (i.e., ideas of reference, odd beliefs, unusual perceptual experiences, and/or vague speech) and at least one month of two or more active-phase symptoms (i.e., delusions, hallucinations, disorganized speech, or grossly disorganized or catatonic behavior) that have caused social or occupational dysfunction. Symptoms common in individuals diagnosed with schizophrenia include dysfunction in "perception, inferential thinking, language and communication, behavioral monitoring, affect, fluency and productivity of thoughts and speech, hedonic capacity, volition and drive, and attention" (APA, 2000, p. 299).

Five subtypes of schizophrenia have been identified in the *DSM-IV-TR* (APA, 2000). Paranoid type is characterized by delusions that are typically organized around a common theme, such as jealousy or persecution. Disorganized type includes disorganized speech (e.g., laughter inappropriate to speech content), disorganized behavior that may lead to difficulty functioning in daily activities, and flat or inappropriate affect. Catatonic type is marked by psychomotor disturbance, such as immobility, excessive movement, negativism, mutism, or echolalia. Undifferentiated type is described as symptoms that meet Criterion A of schizophrenia (i.e., delusions, hallucinations, disorganized speech, disorganized or catatonic behavior, and negative symptoms such as flat affect, alogia, or avolition) but that do not meet criteria for the paranoid, disorganized, or catatonic subtypes. Residual type is evidenced when there has been at least one episode of schizophrenia and there is evidence that a disturbance still exists, but there are no prominent symptoms such as hallucinations or delusions at the time of diagnosis.

Schizophreniform disorder is characterized in the *DSM-IV-TR* (APA, 2000) by the same symptoms as schizophrenia, but the required duration is one to six months and impairment in social or occupational functioning does not need to be present. Schizoaffective disorder is characterized in the *DSM-IV-TR* (APA, 2000) by a mood episode (i.e., depressive, manic, or mixed episode) that occurs simultaneously with the active-phase symptoms of schizophrenia, and the active-phase symptoms must be present for at least two weeks before or after the mood episode. Schizoaffective disorder, bipolar type, occurs when a manic episode or mixed episode is experienced. A depressive episode may occur in addition to a manic or mixed episode in bipolar type.

Schizoaffective disorder, depressive type, is diagnosed when only a depressive episode occurs.

Mood disorder with psychotic features may have a presentation similar to schizoaffective disorder, but it is characterized by the presence of hallucinations or delusions only at the time of a mood episode (i.e., a depressive, manic, or mixed episode; APA, 2000). Psychotic disorder NOS is characterized by psychotic symptoms that do not meet criteria for a single diagnosis. Psychotic disorder NOS may also be an appropriate diagnosis if there is not sufficient information for a specific psychotic disorder diagnosis (APA, 2000).

Mental Illness and Inmates

Without adequate space in psychiatric hospitals or adherence to community mental health treatment, individuals with psychotic disorders such as those just described are left to fend for themselves, and this often leads to encounters with the criminal justice system (Human Rights Watch [HRW], 2003). James and Glaze (2006) used data collected by the Bureau of Justice Statistics (BJS) to examine the number of county, state, and federal inmates with mental health problems. The data from BJS had been obtained by conducting inmate surveys in state and federal prisons and local jails nationwide. Using a stratified two-stage sample, facilities were selected in the first stage, and inmates to be surveyed from those facilities were selected systematically in the second stage. The surveys were administered as an interview using computer-assisted personal interviewing to conduct the interview. The final sample consisted of 12,846 state inmates, 3,119 federal inmates, and 6,214 jail inmates. Overall demographic information was not reported for the sample. James and Glaze identified an inmate as having mental health

problems if he or she had been given a diagnosis of a mental disorder, had received treatment for a mental disorder, or had experienced symptoms based on criteria in the *DSM-IV-TR* in the 12 months prior to when the information was obtained from the inmate. The authors reported that, in 2005, 56% of state inmates, 45% of federal inmates, and 64% of jail inmates had mental health problems.

James and Glaze (2006) also explored historical information of inmates with mental health problems. They found that of the state inmates with mental health problems, 27% had experienced physical or sexual abuse in their past, 61% had at one time been arrested for a violent offense, 74% had a history of drug dependence or abuse, and 58% had been charged with violating the prison rules. These percentages were between 5% and 28% higher than comparable statistics for inmates who did not experience or evidence mental health problems. The data also showed that homelessness and foster care were more prevalent among inmates who had mental health problems than among those without mental health problems (James & Glaze, 2006). Although it appeared common for state prison inmates with or without mental health problems to struggle with finding and maintaining employment, those with mental health problems seemed to have lower rates of employment one month before their arrest than did those without mental health problems (76% and 70%, respectively; James & Glaze, 2006).

In a smaller sample, Matejkowski, Cullen, and Solomon (2008) examined historical and demographic information of mentally ill inmates who had been convicted of a murder charge. Their study focused on 89 inmates sentenced to death between 1977 and 2002, 73 inmates sentenced to life without parole between 1993 and 2002, and 1,235 inmates sentenced to a fixed term between 1990 and 2002. Data about demographics,

crime characteristics, victim characteristics, substance use, treatment history, criminal history, and educational history were obtained from multiple agencies, including courts, the Clerk of the Court's Office, the Attorney General's Office, and the Office of the Public Defender. The authors found that the age range for mentally ill inmates incarcerated for murder was 14 to 63 years of age. A majority of the sample were White males (71% White; 77% male). Additionally, most had graduated from high school (42%) or had received the equivalent of a high school diploma (15%). The authors also determined that a majority were involved in a significant relationship: 17% had been married at the time of the murder, and 48% of those who were not married had been involved in an intimate relationship at the time of the murder. The most common diagnosis was major depressive disorder (MDD), followed by schizophrenia (61% and 28%, respectively). Similar to James and Glaze (2006), Matejkowski et al. found that histories of criminal activity, substance abuse, and family dysfunction (e.g., child abuse, substance abuse by caregiver, or criminal activity by caregiver) were common among these individuals.

Laajasalo and Hakkanen (2004) conducted a study of individuals convicted of murder to compare characteristics of those with psychiatric diagnoses of alcohol abuse, drug abuse, schizophrenia, or personality disorders with a group of individuals who had been convicted of murder but who had no psychiatric diagnoses. The authors obtained forensic psychiatric evaluations of 200 inmates (182 males and 18 females) between the ages of 15 and 70 years old who had been convicted of homicide in Finland between 1989 and 2001. They found that individuals diagnosed with personality disorders or substance abuse disorders had demonstrated significantly more school-related problems,

such as attention and concentration deficits, than had individuals in the other three groups. Similar to the findings of James and Glaze (2006), offenders with no diagnosis were less likely to have been unemployed or to have lived alone before their arrest than were those with a diagnosis. Of individuals with any psychiatric diagnosis, those diagnosed with schizophrenia were the most likely to live alone. Those diagnosed with schizophrenia were also the least likely to have been married, whereas those diagnosed with personality disorders were the most likely to have been married.

Koetting, Grabarek, Van Hasselt, and Hazelwood (2003) were interested in exploring background information that could have implications for risk assessment of mentally ill individuals. The authors reviewed records of 23 males and 2 females residing in a forensic psychiatric pre-release facility in Florida. The mean age of the participants was 42 years, and Hispanics and African Americans were overrepresented in the sample. The participants had transferred to the facility from a Florida state hospital after they had been found either not guilty by reason of insanity or incompetent to stand trial. The authors found that most of the participants had had prior psychiatric hospitalizations: 96% had had at least one hospitalization, and 52% had had over five hospitalizations. The authors also examined the relationship between the victim and the offenders accused of a violent offense. They found that 16% of victims were the offenders' mothers, 8% were spouses, 8% were neighbors, and 28% were strangers.

Cuellar, Snowden, and Ewing (2007) also conducted a study of psychiatric treatment of individuals with mental illness who had committed criminal offenses. Their goal was to determine how many individuals who had been arrested over a 10-year period had been receiving mental health treatment. The authors obtained a random sample of

6,624 individuals (3,592 females and 3,032 males) over the age of 18 from the California

Medicaid claims records of Los Angeles County mental health system providers. The

records were then matched against state criminal justice arrest records from July 1991 to

July 2001 to determine arrest histories of participants. The ages of the participants were

as follows: 24.5% were 18-29 years old, 47.4% were 30-44 years old, and 28.2% were 45

years or older. A majority of the participants were White or Hispanic (43.1%), followed

by Asian or other races (33.1%) and African American (23.8%). The diagnoses of the

sample included schizophrenia (52.8%), psychosis or delusional disorder (6.1%), bipolar

disorder (7.1%), depression (28.1%), and other diagnoses (5.9%).

Cuellar et al. (2007) found that 23.6% of the participants had been arrested over a

10-year period. Only 47% of these individuals had received at least one psychiatric

service prior to their arrest. At some time within the 6-month period prior to arrest, 10.6%

had received inpatient treatment, 9.6% had received treatment for a crisis, and 26% had

received outpatient treatment. The authors suggested that the criminal justice system

could contribute an important service by providing individuals with mental health

services to reduce the likelihood that individuals with mental illness would commit more

offenses.

In sum, studies of the characteristics and background information of mentally ill

individuals who have been involved in the criminal justice system appear to have

common findings. Some of the common factors found include histories of criminal

activity (Cuellar et al., 2007; James & Glaze, 2006; Matejkowski et al., 2008), substance

abuse (James & Glaze, 2006; Laajasalo & Hakkanen, 2004; Matejkowski et al., 2008),

unemployment (James & Glaze, 2006; Laajasalo & Hakkanen, 2004) and abuse as a child

(James & Glaze, 2006; Matejkowski et al., 2008). There were also some findings that were not consistent across studies. In terms of treatment, Koetting et al. (2003) found that most participants had been hospitalized, whereas Cuellar et al. (2007) found that fewer than half of the individuals in their sample had received treatment of any kind in the year prior to their arrest. It is important to note these differences could be the result of the different populations from which the samples were obtained.

Offenses Committed by Mentally Ill Individuals

In addition to examining common factors of offenders with mental illness, several researchers have examined the nature and prevalence rates of crimes committed by individuals with mental illness who reside in different settings (Ashford, 1989; Cuellar et al., 2007; Hodelet, 2001; James & Glaze, 2006; Koetting et al., 2003; Laajasalo & Hakkanen, 2004; Modestin & Ammann, 1995). Ashford (1989) aimed to compare offenses, history of violence, and criminal history for inmates with and without mental illness from the Maricopa County Jail in Arizona. Data were collected from the jail records for each of the inmates. The randomly selected sample consisted of 82 severely disordered inmates (SD), 212 mentally disordered inmates (MD), and 375 non-disordered inmates (ND). Inmates were categorized as severely disordered if they were diagnosed with dementias, organic brain syndromes, or psychotic disorders. Inmates were categorized as MD if they were diagnosed with any other Axis I or Axis II disorder. Overall demographic information (i.e., sex, age, race) was not reported for the sample.

Ashford (1989) found a significant difference between the SD inmates and the ND inmates in age, stability, ethnicity, and marital status. The SD group tended to be older and less stable (i.e., no close family or community ties) than the ND group. Ashford

also reported that inmates in the ND group were more likely to be Black and less likely to be Hispanic than the MD group. The SD inmates were also more often single or divorced than were the ND inmates. In regard to offenses, the SD group and the MD group differed significantly from the ND group in their history of violence. Ashford found that 36% of the SD group, 31% of the MD group, and 22% of the ND group had a history of violence. Although not a statistically significant finding, the author noted that 46% of the SD group had been charged with a serious crime whereas 34% of the ND group had had serious charges. A serious crime was described as a crime that involved harm to or death of another person.

Modestin and Ammann (1995) aimed to explore the prevalence of criminality in psychiatric patients. Their psychiatric sample consisted of 687 individuals (54% male and 46% female) admitted to the Psychiatric University Hospital of Berne, Switzerland, in 1987. The mean age of the sample was 39.4 years for the males and 43.8 years for the females. In terms of socioeconomic status, the largest group of individuals (42% of males and 37% of females) were in the upper low class, 3% of the males and 4% of the females were in the upper middle class, 5% of males and 8% of females were in the middle class, 22% of males and 27% of females were in the lower middle class, 42% of males and 37% of females were in the upper low class, and 28% of males and 24% were in the low class. The authors also reported the size of the community in which the patients lived. The largest group (37% of males and 43% of females) reported living in a community with a population of 100,000 or greater. The authors created a control group by matching 687 individuals from the community to the psychiatric sample based on community size, gender, age, marital status and economic level.

Criminal records from the Swiss Central Criminal Record Department were examined for all individuals studied. The authors found that 65% of the matched pairs were concordant. In 81% of these pairs, both individuals did not have a criminal record, whereas in 19% both individuals did have a criminal record. The authors suggested that the rate of concordance was significantly higher than chance. The authors also examined the difference in criminal behavior between the psychiatric group and the control group. They found that 51% of males with a psychiatric diagnosis and 36% of males without a psychiatric diagnosis had a criminal record. They also found that 21% of females with a psychiatric diagnosis and 6% without a psychiatric diagnosis had a criminal record. Based on the results, Modestin and Ammann (1995) suggested that criminal behavior was more common among individuals with a psychiatric diagnosis than among individuals without a psychiatric diagnosis, and they concluded that criminal behavior could be reduced by providing individuals with successful therapy.

In the study discussed previously by Cuellar et al. (2007), the researchers also examined the frequency and severity of offenses committed by individuals with mental illness. As just noted, 23.6% of the participants had been arrested over a 10-year period. Examining the most serious offenses of these individuals, the authors found that 37.7% had been arrested for a violent offense (murder or assault), 22.8% for drug offenses, 18.5% for property offenses, and 10.6% for a minor or other offense.

In another study discussed above, Koetting et al. (2003) also explored types of offenses committed by mentally ill individuals who resided in a forensic pre-release program. They found that 88% of the participants had committed a violent offense, whereas 12% had committed a nonviolent offense (i.e., property or drug-related offense).

More specifically, 16% had been charged with homicide, 16% had been charged with a sexual offense, 8% had been charged with robbery, 36% had been charged with assault/battery, 12% had been charged with property or drug-related offenses, and 4% had been charged with arson.

James and Glaze (2006) also examined offenses of state prison inmates with a mental health problem and found that 49% had committed violent crimes, whereas the remainder of offenses were property, drug, or public order offenses (19.6%, 19.3%, and 11.9%, respectively). They reported that 61% of state prison inmates with mental problems had been convicted of a violent offense prior to their current arrest.

Looking across these studies, offenses committed by individuals with mental illness seem to vary depending on the setting from which the sample was obtained. However, overall it does appear that criminal behavior has been found to occur frequently in the mentally ill population.

Mental Illness and Violence

A common question in the field of risk assessment is whether individuals with mental illness pose a higher risk of violence than those without mental illness. A number of studies have been conducted for the purpose of determining the relationship between mental illness and violence. The articles discussed in this section represent only a small subset of all such studies; they were selected so as to include a range of time from earlier studies to more recent studies.

An early study conducted by Bland and Orn (1986) indicated that violent behavior was common among those with mental illness. The authors examined family violence in individuals diagnosed with major depression, alcohol abuse or dependence, or antisocial

personality disorder. The data were obtained from a random sample of 1,200 individuals

(41% female and 59% male) who lived in Edmonton, Alberta. Ages of the participants

ranged from 18 to 65 and older (17% were 18-24 years old, 50% were 25-44 years old,

23% were 45-64 years old, and 10% were 65 years or older). Interviews were conducted

by individuals who had been trained over a 10-day period to conduct the Diagnostic

Interview Schedule. The researchers found that violent behavior was reported by 55% of

participants diagnosed with at least one of the disorders, whereas violent behavior was

reported by 15.5% of participants without one of the diagnoses. The authors also

suggested that 80%-93% of individual who had a comorbid alcohol abuse disorder had

been involved in violent behavior.

Swanson, Holzer, Ganju, and Jono (1990) examined the relationship between

violence and mental illness among adults in the community. Using the Epidemiological

Catchment Area (ECA) method, the authors obtained data from surveys and diagnostic

interviews in five areas in the United States (New Haven, Baltimore, St. Louis, Raleigh-

Durham, and Los Angeles), resulting in what is considered a large and representative

sample of the communities. Structured diagnostic interviews were conducted with one

individual in randomly selected households. The sample consisted of 4,717 males and

5,306 females who were 18 years old or older. The authors did not report information

about ethnicity. They found that about half of the 368 individuals who reported engaging

in violence met criteria for a mental disorder. The authors also noted that violent behavior

was reported by 2.1% of individuals without a diagnosis, 6.8% of individuals with one

diagnosis, 17.5% of individuals with two diagnoses, and 17.5% of individuals with three

or more diagnoses. Similar to the findings of Bland and Orn (1986), individuals diagnosed with substance abuse disorders reported the most violent behaviors.

Fulwiler, Grossman, Forbes, and Ruthazer (1997) conducted a study to determine the relationship between substance abuse and violent behavior in individuals with mental illness living in the community. The total sample of 64 participants (71% male and 29% female) was obtained from a community treatment facility in Boston. Information about the participants was gathered from a structured interview at intake, interviews with family members, inpatient records, outpatient records, and arrest records if available. The mean age of the sample was 41 year ($SD = 11$); 46% of the sample were Caucasian and 43% were African American. The results from the demographic section of the study indicated that violent behavior was more common in individuals who had been diagnosed at an earlier age than those diagnosed at a later age: mean age of diagnosis was 20.21 years old for violent participants and 31.73 years old for nonviolent participants. The authors concluded that the onset of alcohol or drug abuse before the age of 15 was the strongest risk factor.

A meta-analysis was conducted by Bonta, Hanson, and Law (1998) to examine if a difference in predictors of recidivism existed between offenders with mental disorder and offenders without mental illness. Published and unpublished studies from 1959 to the end of 1995 were gathered from two electronic databases: *PsycLit* and the National Criminal Justice Reference Service. Due to the large number of predictors examined in the studies, the authors grouped the predictors into four domains: personal demographics, criminal history, deviant lifestyle-history, and clinical factors. The authors found no difference in predictors between mentally ill offenders and offenders without mental

illness. Criminal history, antisocial personality, substance abuse, and family dysfunction appeared to be the most accurate predictors of recidivism in both groups. Bonta et al. concluded that "models of psychopathology may have taken us as far as they can, and it is time to expand our approach to understand the mentally disordered offender" (p. 139). The authors suggested that, rather than solely identifying a person with a mental illness as posing a risk for violent behavior, it would be more effective to explore the criminological and social factors of mentally ill offenders.

Although some studies suggest there is a greater prevalence of violence in mentally ill individuals than in those without mental illness (Bland & Orn, 1986; Corrigan & Watson, 2005; Gillies & O'Brien, 2006; Swanson et al., 1990), Arboleda-Florez, Holley, and Crisanti (1998) argued that ultimately there was not enough evidence to conclude that a causal relationship exists between mental illness and violent behavior. Arboleda-Florez et al. (1998) proposed that the literature to date included methodological errors that created barriers to making causal inferences between mental illness and violence, such as "lack of adjustment for comparisons, lack of control for effects of psychiatric or other medications in treated samples, selection bias, information bias, misclassification of mental illness, and deficiencies in temporal ordering of causal factors" (p. S39). Due to these limitations, only certain conclusions could be drawn, which the authors identified as follows: There is a high rate of mental illness in incarcerated individuals; mentally ill individuals have a high risk of reoffending when released, especially if they have a history of violence; those who are hospitalized are likely to be violent in the hospital; and family members are the most likely victims of violence. The authors suggested that jumping to a conclusion that there is a causal

relationship between mental illness and violence after considering the limitations

common in the literature could have major repercussions for mentally ill individuals as

well as for caregivers and agencies involved in providing resources for these individuals.

Fulwiler and Ruthazer (1999) expanded the earlier findings of Fulwiler et al.

(1997) and examined the relationship between adult violence and early substance abuse

in combination with a history of a diagnosis of conduct disorder. The sample in this study

also consisted of individuals from a community treatment team in Boston. Information

was gathered by self-report, review of available psychiatric records, interviews with

family members, and, in some cases, arrest records. The sample consisted of 78

participants (72% male; 28% female), with a mean age of 42.4 years ($SD = 12.3$). Of the

participants, 51% were Caucasian and 37% were African American. The authors

concluded that a previous diagnosis of conduct disorder was a risk factor for violent

behavior later in life, and half of the individuals who began abusing alcohol or drugs

before the age of 15 also had a diagnosis of conduct disorder.

Corrigan and Watson (2005) conducted a study to explore the frequency of

violence among individuals with mental illness. They used data from the National

Comorbidity Survey (NCS), which is a stratified, multistage area probability sample of

individuals in 48 states. The sample consisted of individuals living in the community who

were between the ages of 15 and 54. Participants were interviewed by members of the

Survey Research Center at the University of Michigan between September 1990 and

February 1992. The total sample was composed of a total of 8,098 individuals, 5,865 of

whom completed an additional survey that included items that were proxies to violent

behavior. Overall demographic information about the sample was not included in the article.

When demographic factors were examined, Corrigan and Watson (2005) found that gender, age, and ethnicity were associated with violent behavior; specifically, males aged 15-24 were about five times more likely to report violent behavior than were any other gender or age groups. Individuals diagnosed with a mental illness had engaged in more violent behavior than those without a mental illness. The authors also found that only 1.9% of individuals who had no diagnosis over their lifetime reported violence. Between 4.0% and 7.0% of individuals diagnosed with mental illnesses (e.g., phobias, agoraphobia, generalized anxiety disorder, panic disorder, posttraumatic stress disorder [PTSD], dysthymic disorder, and major depressive disorder) reported violent behaviors over their lifetime, and those with bipolar disorder, alcohol dependence, drug dependence or a non-affective psychotic disorder reported higher rates of violence (12.2%, 11.5%, 8.2%, and 10.9% respectively). The authors concluded that mental illness could be a predictor of violent behavior but that demographic factors such as age, gender, and ethnicity tended to be better predictors of violent behavior.

Gillies and O'Brien (2006) conducted a review of research literature aimed at further clarifying the relationship between violent behaviors and individuals with mental illness. The authors conducted a systematic search of literature using electronic databases and found 226 articles that included numerical prevalence rates and risk factors for over 250 participants. Overall demographic information was not included in Gillies and O'Brien's review. They found that the rate of violent behaviors by individuals receiving psychiatric outpatient care was noticeably higher than it was for those in inpatient care.

The authors reported that 6% to 23% of psychiatric inpatients engaged in violent

behavior and 12% to 45% of individuals released from a psychiatric hospitals and

receiving outpatient care engaged in violent behavior within a year of their release.

    Gillies and O'Brien (2006) referred to several studies specifically in their review.

For example, they cited Steadman et al.'s (1998) finding that 18% of individuals with

mental illness had engaged in violent behavior within six months of release from an

inpatient facility. They also noted Walsh et al.'s (2004) report that over a two-year period

19% of individuals with a psychotic disorder in general, and 25% of individuals

specifically diagnosed with schizophrenia, engaged in physical assault. The authors also

looked at studies that compared incidents of violent behavior by individuals with a

mental illness and those without a mental illness. It was found that there were more

incidents of violent behavior – by a factor ranging from 4 to 10 – by individuals with a

mental disorder. The findings of the literature review led Gillies and O'Brien to conclude

that many individuals who are diagnosed with a mental illness may engage in violent

behavior at a greater incidence than those who are not diagnosed with a mental disorder.

However, the authors did not specify whether violence in this population increased when

symptoms of mental illness were active.

    Elbogen, Beckham, Butterfield, Swartz, and Swanson (2008) more recently

conducted a study to determine risk factors for violence in veterans diagnosed with a

psychotic disorder or a major mood disorder. The data were obtained from a preexisting

database that included veterans from four states (i.e., Connecticut, Maryland, New

Hampshire, and North Carolina) receiving mental health services. Structured interviews

were conducted with the participants between June 1997 and December 1998. The

sample consisted of 278 participants (90% male; 10% female) with a median age of 46

years who had been diagnosed with a psychotic or major mood disorder (58% were

diagnosed with PTSD, 54% with a substance abuse disorder, 56% with a psychotic

disorder, and 28% with a head injury). The sample included 49% Caucasian individuals

and 51% other ethnicities. Approximately 19% of the sample reported engaging in

violent behavior in the six months prior to the study. The authors found that the presence

of homelessness, PTSD, and head injury were associated with a higher probability of

violence, and the absence of these factors was associated with a lower probability of

violent behavior in veterans. They also found that the presence of PTSD in conjunction

with a head injury increased the likelihood of violent behavior in veterans.

Based on this review of studies of mental illness and violence, it appears that

violent behavior is more prevalent in individuals with a mental illness than in individuals

without a mental illness (Bland & Orn, 1986; Corrigan & Watson, 2005; Gillies &

O'Brien, 2006; Swanson et al., 1990). It is debatable, though, whether this prevalence

would suggest that mental illness is a strong predictor of violence. Some studies have

suggested that other factors, such as age, gender, ethnicity, antisocial personality,

substance abuse, and family dysfunction, are better predictors of violent behavior than is

the presence of a mental disorder (Bonta et al., 1998; Corrigan & Watson; 2005; Fulwiler

et al., 1997; Fulwiler & Ruthazer, 1999). It appears that, consistent with the argument

made by Arboleda-Florez et al. (1998), barriers to determining causality between mental

illness and violence appear to be present even in more recent studies. It is difficult to

determine whether these are the same barriers that Arboleda-Florez et al. suggested, but a

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causal relationship between violence and mental illness cannot be inferred from any of the studies discussed in the previous section.

Psychotic Disorders and Violence

As evidenced by the studies just discussed, criminal offending and violence by mentally ill individuals has been researched in attempts to better understand the causes of these behaviors and how to prevent these behaviors. Criminal behavior has also been investigated in those who suffer from psychotic disorders specifically. In an early study, Klassen and O'Connor (1988) examined possible predictors of violence in individuals with and without a psychotic disorder. The sample included 304 males from an inpatient urban community mental health center who had a history of violence. Information was gathered from structured interviews, Life Experiences Survey, mental health center records, and arrest records. Information on race and age in the sample were not provided. The following diagnoses were included: paranoid schizophrenia (24%), other schizophrenia (21%), alcohol or drug abuse without antisocial personality disorder (16%), alcohol or drug abuse with antisocial personality disorder (6%), antisocial personality disorder with substance abuse (4%), organic brain syndrome (8%), bipolar affective disorder (6%), depression (4%), adjustment disorder (7%), explosive disorder (3%), and other psychosis (1%). The researchers attempted to contact the participants at 3 months, 6 months, and 9 months after the initial interviews to determine whether they had engaged in any violent behavior. A discriminant analysis was conducted to determine variables associated with violent behavior in individuals with psychotic disorder and those without psychotic disorders.

Klassen and O'Connor (1988) found 64 variables associated with violent recidivism in the total sample. The classification that was determined for the groups was highly accurate (88.1% for those with schizophrenia and 92.9% of those without schizophrenia). Some variables were associated with violent behavior in both groups: history of child abuse, parents having physical fights, loss of parent through death or separation, and being unemployed for more than a year. Life events, measured by the Life Experiences Survey, were related to violence in the non-schizophrenia group, but not in the schizophrenia group. Arrest was found to be associated with violence in the schizophrenia group but not in the non-schizophrenia group. The authors concluded that more research on predictor variables could lead to a reliable way to predict violence in individuals with mental disorders.

Lindqvist and Allebeck (1990) examined the crime rates of individuals diagnosed with schizophrenia in Stockholm, Sweden. The authors identified individuals from the Stockholm county inpatient register who had a diagnosis of schizophrenia and who had been released from an inpatient psychiatric hospital during 1971. The authors then obtained criminal histories for these individuals from the Central Police Register. Criminal history data were compared to the overall crime rates of the general population of Stockholm. The sample consisted of a total of 644 individuals with schizophrenia (51% male; 49% female). Age in the sample ranged from 12 to 51 years. It was found that recidivism rates among males with schizophrenia were similar to recidivism rates of males in the general population of Stockholm (22% and 25%, respectively). The recidivism rate among females with schizophrenia was greater than the rate for females in the general population (23% and 14%, respectively). Violent crimes were four times

more frequent among all individuals with schizophrenia than among individuals in the general population.

Muntaner, Wolyniec, McGrath, and Pulver (1998) aimed to explore possible predictors of arrest for individuals with a psychotic disorder. The sample was collected from 15 hospitals in the Greater Baltimore area between June 1983 and April 1989. Admission forms were reviewed and included if they met specific criteria: The individual had to be Caucasian, at least 16 years old, and have a psychotic disorder (i.e., schizophrenia, schizoaffective disorder, schizophreniform, brief reactive psychosis, atypical psychosis, bipolar disorder, depression with psychotic features, psychoactive-substance-induced psychosis, or paranoid, schizotypal, borderline, or schizoid personality disorder). Individuals who met the criteria and agreed to participate completed a semi-structured interview, a mini-mental state examination, a partial Rorschach, and a modified Diagnostic Interview Schedule. The sample included 1,670 individuals, and the authors did not provide overall demographic information (i.e., age, race, sex).

Muntaner et al. (1998) found that individuals diagnosed with substance-induced-psychosis were more likely than individuals with other diagnoses to have been arrested during their lifetime and as a juvenile (before 18 years old). They also reported that individuals with multiple hospital admissions were about twice as likely to have been arrested than were those who had only one admission. The authors also suggested that low socioeconomic status was a strong predictor of arrest of individuals with psychotic disorders. The authors concluded that substance-induced psychosis was an important correlate in arrest and that chronic psychosis may be an important risk factor in the arrest rates of these individuals.

Angermeyer (2000) reviewed all epidemiological studies between 1990 and 1998 in which the relationship between psychotic disorders and violence was examined. A moderate significant relationship was found between psychotic disorders and violence, although individuals with substance abuse disorders or personality disorders appeared to be at greater risk for violent behavior. Also, violent behavior of an individual with a psychotic disorder was often commonly associated with a specific symptom constellation (i.e., experiencing delusions, disorganized thinking, and paranoia). The author suggested that the proportion of crimes committed by individuals with psychotic disorders was small and the public fear of individuals with severe mental illness was unwarranted.

In a later study, Walsh et al. (2003) investigated the prevalence of assault of individuals diagnosed with schizophrenia and the sociodemographic and clinical risk factors that are associated with violent behavior in this population. The sample consisted of 271 individuals (76% male; 24% female; age 18 to 65 years) diagnosed with schizophrenia. The individuals had been admitted to one of three psychiatric hospitals in London. The participants were interviewed at baseline about sociodemographic and clinical factors and were interviewed again two years later to determine if they had engaged in assault. The average age of the sample during the baseline interview was 34 years, and the average length that participants reported having had schizophrenia was 11 years. The sample included 115 Caucasian, 97 African-Caribbean, and 59 other ethnicities. Prior to the study, 22% of participants had been convicted of a violent crime and 34% had been convicted of a nonviolent crime. During the two-year period after initial interview, 25% of participants engaged in assaultive behavior. Those who committed assault were more likely to be under 40 years of age, to have received special

education, and to have had a violent or nonviolent prior conviction. Those who committed assault tended to have an earlier psychotic onset, to have engaged in substance use in the past year, and to have abused alcohol in the past year.

Tengstrom, Hodgins, Grann, Langstrom, and Kullgren (2004) explored the relationship between schizophrenia and substance abuse and/or psychopathy in criminal offending. The sample included 202 males diagnosed with schizophrenia who had been found guilty of a violent offense. The mean age of participants during the interview was 32.4 years. Information was obtained from pre-trial psychiatric records in Sweden between 1988 and 1993. Psychopathy was defined as a score of 23.4 or greater on the Psychopathy Checklist, Revised (PCL-R) The offenders were divided into four groups: (a) the S (schizophrenia) group included 88 individuals without a substance use disorder who scored below a 23.4 on the PCL-R, (b) the S+SUD (schizophrenia + substance use disorder) group included 55 individuals with a substance use disorder who had scores of less than 23.4 on the PCL-R, (c) the S+P (schizophrenia + psychopathy) group included 12 individuals who did not have a substance use disorder and who scored higher than 23.4 on the PCL-R, and (d) the S+P+SUD (schizophrenia + psychopathy + substance use disorder) group included 47 individuals with substance use disorders who scored 23.4 or higher on the PCL-R. Also, all individuals who scored 23.4 or higher on the PCL-R were divided into two groups: those without a substance use disorder and those with a substance use disorder. Data on the participants were obtained from the Hospital Discharge Register and from police records.

Tengstrom et al. (2004) found that individuals with schizophrenia who had high scores on the PCL-R (i.e., S+P and S+P+SUD) had been convicted of more violent

offenses than those with lower scores. They also found a significant positive correlation between PCL-R scores and number of convictions. Those with high PCL-R scores tended to be younger at their first conviction than those with a low PCL-R score. Substance use disorders before the age of 18 were found to be associated with the number of convictions in individuals with higher PCL-R scores.

Swanson et al. (2006) examined the prevalence of violence in individuals with schizophrenia and risk factors that that may predict violent behavior by individuals with schizophrenia. The authors used data from the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) project. These data were obtained from 57 clinical sites in 24 states in the United States using randomized trials between January 2001 and December 2004. Information was gathered from the participants using structured interviews and multiple symptom inventories. The sample used for the study conducted by Swanson et al. consisted of 1,410 participants (74.3% male; 25.7% female). The mean age of the sample was 40.5 years. The sample included 60.6% Caucasian, 34.8% African American, and 4.6% other racial backgrounds. The risk of violence was assessed by examining five domains, including dispositional factors, social-contextual factors, life-historical factors, clinical factors, and treatment factors.

Swanson et al. (2006) found that 19.1% of the random sample from clinical sites around the United States had engaged in violent behavior over a 6-month period. Individuals who engaged in minor and serious incidents of violence had a significantly higher rate of positive symptoms than those who did not have incidents of violence. Individuals living alone were less likely than individuals living with other people to engage in any violent behavior. However, individuals living with family were more likely

than those not living with family to engage in violent behavior. It was found to be more common for females to live with family, resulting in more opportunities for them to act violently. On the other hand, participants who had supportive family relationships in which they believed they were "listened to most of the time" (Swanson et al., 2006, p. 497) were 50% less likely to assault a family member than were those who did not feel listened to by family members. The authors also suggested that the effect of substance abuse on serious violent incidents may be mediated by younger age, positive symptoms, childhood conduct problems, and recent victimization. That is, the existence of any of these factors in addition to substance abuse increased the likelihood of violent behavior. The authors proposed that an understanding of both the characteristics of a person and environmental factors (e.g., whom they lived with, socioeconomic status, history of abuse, and victimization) was important in assessing the risk of violence and reducing that risk.

Soyka, Graz, Bottlender, Dirschedl, and Schoech (2007) examined correlations between clinical characteristics and post-release criminal convictions to identify possible predictors of later crime. The authors examined records from the German national crime register and the Department of Psychiatry at the Ludwig-Maximilians-University for former inpatients diagnosed with schizophrenia between 1990 and 1995. The crime register was examined to determine criminal behavior 7 to 12 years after the participants' discharge. The sample consisted of 1662 participants (685 males and 977 females). All participants were Caucasian and the mean age at admission was 39.05 years. Of the total sample, 2.3% had been listed in the crime register before admission and 0.5% had been convicted of a violent crime. The authors found that the sample of individuals committed

a total of 878 nonviolent offenses and 94 violent offenses in the 7 to 12 years after

discharge. The average number of crimes an individual was charged with during this time

period was 5.2. Males were three times more likely than were females to commit a crime.

Also, individuals who showed lack of insight and/or were hostile at discharge were more

likely to commit a violent offense. The results also suggested that individuals who

experienced depressive symptoms were less likely to engage in criminal activity.

A meta-analysis of the relationship between violence and psychosis was

conducted by Douglas, Guy, and Hart (2009). The aims of this study were to determine

the magnitude of the association between psychosis and violence and to identify possible

moderators that could have affected the results of past research. The authors used 204

studies for the analysis with a total of 885 effect sizes. It was found that there was a 49%-

68% increased likelihood of violence in individuals with a psychotic disorder as

compared with individuals without a psychotic disorder. Although the authors reported

that there was a strong association between violence and psychosis, the authors noted the

caveat that many other factors have strong associations with violence as well (e.g.,

history of violence, weapon use, hospital admissions, psychopathy, and juvenile

delinquency).

Douglas, Guy, and Hart (2009) found several moderators to be important. First

was the nature of the comparison group (e.g. community, hospital, others with mental

illness). The authors noted that if the comparison group consisted of individuals with

non-psychotic mental disorders, the odds of violence were slightly higher for those with

psychosis than the comparison group. If the comparison group consisted of individuals

who did not have a mental illness, the odds of violence were substantially higher for

those with a psychotic disorder than for the comparison group. The second important

moderator was how psychosis was determined (i.e., use of an overall diagnosis of

schizophrenia or affective disorder with psychotic features versus identification of

specific psychotic symptoms). Violence was more likely to be associated with psychosis

in studies in which psychosis was measured as a diagnosis of schizophrenia than in

studies in which affective psychosis was used as a measure or in studies in which the

method of measuring psychosis was not reported. The third important moderator was the

time at which a diagnosis with a psychotic disorder was made (i.e., before or after

violence occurred). The authors found that violence and psychosis were more likely to be

associated in studies in which diagnosis and the violent incident occurred around the

same time as compared to before or after the violence occurred.

In sum, similar to findings about violence and mental illness in general, violence

appears to occur more frequently in individuals with psychotic disorders than in

individuals without psychotic disorder (Angermeyer, 2000; Douglas et al., 2009;

Lindqvist & Allebeck, 1990; Swanson et al., 2006; Walsh et al., 2003). Several

researchers have attempted to determine what factors may be predictors of violence in

individuals with a psychotic disorder. Common predictive factors among individuals with

a psychotic disorder who have engaged in violence are substance abuse, psychopathy,

arrest history, symptoms, and environment (Douglas et al., 2009; Klassen & O'Connor,

1988; Muntaner et al., 1998; Soyka et al., 2007; Swanson et al., 2006; Tengstrom et al.,

2004).

Characteristics of Psychotic Offenders

As just noted, many common factors may be present in individuals who have a psychotic disorder and engage in violent behavior. Other researchers have looked specifically at personal characteristics that may be unique to this group of individuals with psychotic disorders who have committed offenses.

Flannery, Penk, Irvin, and Gallagher (1998) conducted a study to explore characteristics of violent and nonviolent individuals diagnosed with schizophrenia. The sample consisted of individuals who had received services from the Department of Mental Health in New York and who met criteria for schizophrenia in 1992. The sample consisted of 475 males and 372 females between 22 and 63 years of age. The sample was 89% Caucasian, 5% African American, and 2% Hispanic. Information about the participants was obtained from the New York State Level of Care Ratings, which include information about social and personal factors such as physical health, diagnoses, legal status, social functioning, difficulties in behavioral adjustment, life functioning skills, ratings of degree and extent of medical and psychiatric care required, rehabilitations services, and potential for community placement. The authors found that individuals with schizophrenia who had a history of violence had displayed major dysfunction in daily self-care, family adjustment, and community social adjustment. The nonviolent individuals tended to have sufficient social role adjustment but had more problems with depressed mood, agitation, and internal confusion than violent individual. The authors also examined differences between those who were interpersonally violent (i.e., had caused or attempted to physically harm another person) and those who were noninterpersonally violent (i.e., had made verbal threats or had caused damage to

property). They found that those who had engaged in interpersonally violent behaviors were more impaired in their social roles than were those who engaged in noninterpersonally violent behaviors; the latter group tended to present with confusion, psychotic symptoms, and dysphoric affect.

Hodelet (2001) conducted a study to explore characteristics that may be associated with criminal offending in individuals with psychotic disorders. The author gathered demographic and background information from records of individuals who had resided in a high-security hospital in British Columbia between December 1998 and February 1999. The sample included a total of 175 patients (87% male; 13% female) between the ages of 19 and 75 years old ($M = 38$ years). The sample was 75% Caucasian, 15% Native American, 6% East Asian, 3% South Asian, and <1% African American. Hodelet reported that 14% had been charged with murder, 9% had been charged with attempted murder, 37% had been charged with assault or robbery, 11% had been charged with a sexual offense, 13% had been charged with a property offense, and 15% had been charged with other offenses. The individuals were divided into three groups based on diagnosis: psychosis alone, psychosis and another diagnosis, and no psychosis. The authors found that 75% of individuals with psychosis alone had committed a violent crime (i.e., murder, attempted murder, assault/robbery, or sexual offense). It was also found that 57% of the individuals with psychosis and another diagnosis had committed a violent offense, whereas only 28% of individuals without psychosis had committed a violent offense. Violent offenders with psychosis alone tended to be older than were those with either psychosis and another diagnosis or no psychosis. It was also found that 38% of the individuals in the sample experienced only delusions, 5% experienced only

hallucinations, and 41% experienced both delusions and hallucinations. Contrary to many other studies (e.g., Bland & Orn, 1986; Fulwiler et al., 1997; James & Glaze, 2006; Matejkowski et al., 2008; Swanson et al, 1990), Hodelet did not find a relationship between violent behavior and substance abuse.

Nijman et al. (2003) compared the difference in background factors between offenders diagnosed with a psychotic disorder and offenders not diagnosed with a psychotic disorder. The sample consisted of 308 male patients from either a forensic hospital in Germany or a forensic hospital in the Netherlands. Demographic, psychiatric, and criminal information was obtained from the hospital files. The German sample consisted of all patients residing in the hospital on January 1, 2002, and the Dutch sample consisted of all admissions when the hospital opened on November 1, 1996, until all 96 beds were occupied. The mean age of the sample was 34.4 years. They found the following: (a) 85% of offenders diagnosed with a psychotic disorder and 60% of offenders not diagnosed with a psychotic disorder had been raised by their grandparents, (b) 77% of offenders diagnosed with a psychotic disorder and 56% of offenders not diagnosed with a psychotic disorder had finished high school, (c) 77% of offenders diagnosed with a psychotic disorder and 43% of offenders not diagnosed with a psychotic disorder had received psychiatric treatment in the past, and (d) 37% of offenders diagnosed with a psychotic disorder and 16% of offenders not diagnosed with a psychotic disorder were first-time offenders. The authors concluded that there were definite differences in the type of crime as well as background factors in offenders who had been diagnosed with a psychotic disorder and those who had not been diagnosed with a psychotic disorder. Noting commonalities of offenders who have been diagnosed with a

psychotic disorder could be important in determining risk factors for violent behaviors by these individuals.

White, Chant, and Whiteford (2006) conducted a study in Australia examining the differences between individuals with a psychotic disorder who had committed a crime and those who had not committed a crime. The authors interviewed 61 males from the remand centre and 102 males from the community who had not been remanded for a crime. The authors found that the individuals in the community were older than the individuals in the centre (37.2 and 27.7 years, respectively). Most of the remandees (90.2%) had been born in Australia. Other birth places included the UK and Ireland (3.3%), New Zealand and the Pacific Islands (1.6%), South East Asia (1.6%), and Central and Southern Africa (1.6%). Although there were no significant differences in the marital status of the two samples, individuals in the remanded sample were more likely to have children than those from the community. There was no difference in the mean age at which the two groups had left school. Homelessness was more common among the remanded group than the community group (18% and 1.6%, respectively). The authors also found that 44.3% of the remanded individuals and 29% of the community individuals had ever been admitted to an emergency department, and 92% of the community individuals but only 42.6% of remanded individuals had ever been prescribed medication. Overall, there did appear to be some differences in the backgrounds of psychotic individuals who had been remanded and those who had not been remanded.

Again, it appears that there are differences in the personal characteristics of offenders who have been diagnosed with psychotic disorders as compared with individuals who have not been diagnosed with a psychotic disorder (Hodelet, 2001;

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Nijman et al., 2003). There also appears to be differences in characteristics of individuals diagnosed with a psychotic disorder who had committed an offense versus those who had not committed an offense (Flannery et al., 1998; White et al., 2006). Overall, these studies have interesting findings, although they included different characteristics for comparison. Still, these characteristics may be important to consider for predicting and preventing this population from committing crimes.

<div align="center">Purpose of the Current Study</div>

As seen in the literature reviewed above, a number of variables (e.g., substance use/abuse, employment, marital status, arrest history, hospitalization, etc.) may differentiate individuals with psychotic disorders from those without psychotic disorders as well as differentiate individuals with a psychotic disorder who engage in violent behavior from those who do not engage in such behaviors. A number of researchers have also examined the prevalence of certain variables in individuals with psychotic disorders. In the current study, I aimed to expand this research to examine differences between individuals diagnosed with a psychotic disorder who commit violent offenses and individuals diagnosed with a psychotic disorder who commit nonviolent offenses. To do so, I examined institutional and medical files of Oregon Department of Corrections (ODOC) inmates to obtain information on 18 historical and demographic variables. The data obtained from the files were compared using statistical analyses.

METHOD

Subjects

The subjects in this study were 73 male inmates diagnosed with a psychotic disorder (i.e., schizophrenia, schizoaffective disorder, bipolar disorder or major depressive disorder with psychotic features, or psychotic disorder NOS) who had been released from ODOC before January 2009. A total of 44 inmates had been incarcerated for a nonviolent offense (e.g., theft, burglary, robbery, possession/distribution/ manufacturing of a controlled substance, unlawful use of a vehicle), and 29 of the inmates had been incarcerated for a violent offense (e.g., arson, assault, kidnapping, rape, murder, or sexual offenses). The group size difference occurred due to the procedures required to obtain files (discussed below).

Procedure

The data for the study were obtained by chart review. A random list of names of inmates who had been identified in the ODOC computerized records as having a Level 3 mental health (MH3) status and had been released before January 2009 was provided. MH3 status included diagnoses of psychotic disorders, severe depressive disorders, bipolar disorder, and PTSD. Files were examined at the Offender Information and Sentence Computation Unit (OISC), where a majority of the files of released inmates are located. Due to time constraints and the difficulty in transporting files from other institutions, only files located at OISC were used in the study. Unfortunately, many files were not available at OISC and were stored at other institutions. In addition, many OISC

files could not be used because the inmate had not been diagnosed with a psychotic

disorder. Therefore, only approximately 25% of the inmates on the random list of names

were included in the study. These factors resulted in an imbalance in group size; that is,

more files were available for nonviolent offenders ($n = 44$) than for violent offenders ($n =$

29). The reason for this imbalance was unknown, but it could have been due to a

systematic bias (e.g., violent offenders on the list may have reoffended or violated their

parole and returned to prison, and therefore their files were no longer available at OISC).

It was also noted that there were fewer names of inmates incarcerated for violent offenses

on the list than there were names of inmates incarcerated for nonviolent offenses.

Although this may indicate that offenders with psychotic disorders commit violent crimes

less frequently than they commit nonviolent crimes, that remains speculation at this point.

Available medical and institutional files were examined to determine specific

diagnoses. If the inmate had been diagnosed with schizophrenia, schizophreniform

disorder, schizoaffective disorder, delusional disorder, psychotic disorder NOS, or a

mood disorders with psychotic features, that diagnosis was noted and further data were

collected from the file, as follows: conviction, arrest record, race, marital status,

employment history, highest grade level completed, psychiatric treatment before arrest,

inpatient treatment, psychiatric medication history, probation or parole revocation,

history of disciplinary reports, age of first crime, age of onset of psychosis, parents'

marital status before participant reached the age of 18, history of abuse, history of

substance abuse, family history of crime, and violence before the age of 18. There were

no exclusionary diagnoses. If the inmate had been diagnosed with multiple diagnoses,

the additional diagnoses were recorded and the inmate was still included in the study.

The data were recorded for each file on separate forms (see Appendix A) and then entered into a database for statistical analysis.

Demographics

Race, age at the time of arrest, and psychotic diagnoses from the sample of nonviolent and violent offenders are presented in Tables 1 through 3. Demographic data from the ODOC were obtained for comparison with the current sample. Because the study included inmates housed at ODOC over a large time span (1990 to 2009), with many subjects' incarceration periods not overlapping with those of other subjects, there was no clear comparison group available. Therefore, to gain a representative estimate of ODOC demographics during the most recent 10-year period, data for each demographic variable from the first of every month from January 2000 to November 2009 were averaged. It should be noted that age at the time of arrest was not available for the ODOC population; therefore, the averages of each age range of incarcerated inmates were used. Also, the age ranges recorded from ODOC were not the same age ranges used for this study. Only an age range was obtained from records so exact ages were unknown; therefore, it was not possible to regroup the sample into age groups that were equivalent to the ODOC age groups. Race and average age of ODOC inmates are presented in Tables 1 and 2.

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Table 1

Race percentages for Nonviolent, Violent, and ODOC Population

Race	Nonviolent %	Violent %	ODOC Population %
Caucasian	56.8	79.3	67.3
African American	18.2	3.4	9.2
Latino/Hispanic	15.9	10.3	10.9
Asian American	0	3.4	1.1
Native American	6.8	3.4	3.0
Unknown	2.3	0	8.6

Table 2

Age at the Time of Arrest for Nonviolent and Violent Offenders in the Study Sample

Arrest age (years)	Nonviolent %	Violent %
15-19	11.4	6.9
20-29	36.4	31.0
30-39	36.9	44.8
40-49	6.8	13.8
50+	6.8	0

Table 3

Average Age of Male Inmates at ODOC
From 2000 through 2009

Age (years)	ODOC Population %
Under 17	0.8
18-24	16.9
25-30	19.0
31-45	42.6
46-60	17.8
61+	3.5

Most of the nonviolent offenders were Caucasian, as were most of the violent offenders. However, a greater proportion of violent offenders than of nonviolent offenders were Caucasian (79.3% and 56.8%, respectively). Both values differed from the ODOC population; approximately 67.3% of the ODOC population were Caucasian, or approximately 10% more than nonviolent psychotic offenders and approximately 12% fewer than violent psychotic offenders. In contrast, there were more African Americans in the nonviolent psychotic offender sample than in the violent psychotic offender sample (18.2% and 3.4%, respectively). There also seemed to be discrepancies between the percentage of African Americans in the ODOC population (9.22%) and in the nonviolent and violent psychotic offender samples (18.2% and 3.4%, respectively). That is, there were more African Americans in the nonviolent offender sample than in the ODOC

population, but fewer African Americans in the violent offender sample than in the

ODOC population. The remaining races (i.e. Latino/Hispanic, Asian American, Native

American, and Unknown races) did not appear to differ substantially from the ODOC

population.

As mentioned previously, there was not a clear comparison group available for

age and there were differences in how ages were grouped in the study sample and ODOC

records. With this in mind, the ages of the ODOC population and nonviolent and violent

offenders appear to be similar in that they most frequently fell in the middle ranges. The

most frequent age groups tended to be 20 to 29 and 30 to 39 in the nonviolent and violent

psychotic sample and 25 to 30 and 31 to 45 in the ODOC population.

Table 4 presents the diagnoses of the offenders from this study. ODOC records do

not indicate the diagnoses of inmates to compare to the study sample, but they do show

that 7.3% of inmates were assigned MH3 status, which includes most psychotic offenders

who are receiving mental health services.

Table 4

Psychotic Diagnosis of Violent and Nonviolent Offenders

Psychotic Diagnosis	Nonviolent %	Violent %
Bipolar w/ psychotic features	6.8	3.4
Depression w/ psychotic features	2.3	6.9
Psychosis NOS	36.4	24.1
Schizophrenia	34.1	41.4
Schizoaffective	20.5	24.1

RESULTS

Frequencies

All data were analyzed using the SPSS version 17 data analysis software. The distribution (number and percentage) of inmates in the violent and nonviolent inmate groups are shown for all levels of each variable in Table 5. The number and percentage of missing data for each variable are also included.

Table 5

Distribution of Nonviolent and Violent Inmates for Each Variable

	Nonviolent ($n = 44$)		Violent ($n = 29$)	
Arrest age (years)	n	%	n	%
15-19	5	11.4	2	6.9
20-29	16	36.4	9	31.0
30-39	16	36.9	13	44.8
40-49	3	6.8	4	13.8
50+	3	6.8	0	0
Missing	1	2.3	1	3.4
Race				
Caucasian	25	56.8	23	79.3
African American	8	18.2	1	3.4

	7	15.9	3	10.3
Latino/Hispanic	7	15.9	3	10.3
Asian American	0	0	1	3.4
Native American	3	6.8	1	3.4
Missing	1	2.3	0	0

Table 5 (cont'd)

	Nonviolent ($n = 44$)		Violent ($n = 29$)	
Marital Status	n	%	n	%
Single	28	63.6	12	41.4
Married	3	6.8	2	6.9
Divorced	10	22.7	11	37.9
Separated	2	4.5	1	3.4
Missing	1	2.3	3	10.3
Parents' Marital Status (before 18 years old)				
Single	4	9.1	1	3.4
Married	13	29.5	13	44.8
Divorced	12	27.3	9	31.0
Separated	0	0	0	0
Widowed	2	4.5	0	0
Missing	13	29.5	6	20.7
Psychotic Diagnosis				
Bipolar w/ psychotic features	3	6.8	1	3.4
Depression w/ psychotic features	1	2.3	2	6.9
Psychosis NOS	16	36.4	7	24.1
Schizophrenia	15	34.1	12	41.4
Schizoaffective	9	20.5	7	24.1
Missing	0	0	0	0
Multiple Dx				
No	32	72.7	21	72.4

	Yes	12	27.3	8	27.6
	Missing	0	0	0	0

Antisocial PD Diagnosis

No		41	93.2	28	96.6
Yes		3	6.8	1	3.4
Missing		0	0	0	0

Table 5 (cont'd)

	Nonviolent ($n = 44$)			Violent ($n = 29$)	
Age of Psychotic Onset	*n*	%		*n*	%
Before 15	14	31.8		4	22.2
15-19	4	9.1		8	44.4
20-29	13	29.5		3	16.7
30-39	1	2.3		3	16.7
Missing	12	27.3		11	37.9
Age at 1st Conviction					
Before 15	14	31.8		9	31.0
15-19	16	36.4		9	31.0
20-29	6	13.6		4	13.8
30-39	0	0		0	0
40+	1	2.3		1	4.3
Missing	7	15.9		6	20.7
Hospitalization					
No	7	15.9		7	24.1
Yes	35	79.5		20	74.1
Missing	2	4.5		2	6.9
Medication at Prison Intake					
No	11	25.0		8	27.6

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Yes	31	70.5	18	62.1
Missing	2	4.5	3	10.3
Probation/Parole Revocation				
No	13	29.5	12	41.1
Yes	26	59.1	13	44.8
Missing	5	11.4	4	13.8

Two-Way Contingency Table Analysis

Two-way contingency table analyses were conducted to evaluate whether the violent and nonviolent groups differed significantly on any of the variables examined. The only variable that showed a significant result was age at psychotic onset, Pearson χ^2 (3, $N = 73$) = 11.09, $p = .01$, Cramer's $V = .47$. This variable had four levels (<15 years old, 15-19 years old, 20-29 years old, 30-39 years old). The number and percentage of inmates in each age category for both violent and groups are presented in Table 6.

Table 6

Nonviolent and Violent Individuals in Each Age Range

Age	Nonviolent (n = 32)	Violent (n = 18)
Before 15	43.8%	22.2%
15-19	12.5%	44.4%
20-29	40.6%	16.7%
30-39	3.1%	16.7%

Follow-up pairwise comparisons were conducted to identify the location of significant differences among levels of this variable (using an alpha of .05). Table 7 shows the results of these analyses. It should be noted that this analysis did not include missing values; therefore, the sample size for the analysis was smaller than the total sample size, and the frequencies were calculated based on the smaller sample size (i.e., excluding the missing data). The nonviolent group included significantly more individuals whose age at psychotic onset was younger than 15 than individuals whose age at psychotic onset was between 15 to 19. The violent group showed the opposite result;

Table 7

Pairwise Comparisons of Age of Psychotic Onset

Comparison	Pearson χ^2	*p* value	Cramer's *V*
Before 15 vs. 15-19	5.93	0.015	0.44
Before 15 vs. 20-29	0.06	0.803	0.04
Before 15 vs. 30-39	4.20	0.040	0.44
15-19 vs. 20-29	0.10	0.755	0.08
15-19 vs. 30-39	6.60	0.010	0.49
20-29 vs. 30-39	4.82	0.028	0.49

 that is, it included significantly more individuals whose age at psychotic onset was from 15 to 19 than individuals whose age at psychotic onset was younger than 15. Additionally, the nonviolent group included significantly more individuals whose age at psychotic onset was 20 to 29 than individuals whose age at psychotic onset was between 15 to 19. Again, the violent group showed the opposite result; that is, it included significantly more individuals whose age at psychotic onset was from 15 to 19 than individuals whose age at psychotic onset was 20 to 29. Finally, the nonviolent group

included significantly more individuals whose age at psychotic onset was 20 to 29 than 30 to 39. The violent group had an equal number of individuals in each of these age groups. Overall, it appears that inmates in the violent group more often experienced psychotic onset between the ages of 15 to 19 than at younger or older ages, whereas inmates in the nonviolent group more often experienced psychotic onset before the age of 15 and between the ages of 20 to 29. However, when Holm's sequential Bonferroni method was used to control for Type I error at the .05 level across all six comparisons, none of the comparisons were significant.

DISCUSSION

Summary of Findings

The current study was an exploratory attempt to determine whether there were differences in background and demographic factors between violent and nonviolent inmates with a psychotic disorder. A two-way contingency table analysis was conducted and yielded a significant difference between the violent and nonviolent inmates in only one variable: age of psychotic onset. The results suggested that the violent offender group more often experienced psychotic onset between the ages of 15 to 19, whereas the nonviolent group more often experienced psychotic onset before the age of 15 or between the ages of 20 to 29. These findings should be considered with caution because they were not significant when Holm's sequential Bonferroni method was used to control for Type I error at the .05 level.

Although age of psychotic onset was the only variable that was found to be significantly different between the two groups, there were other notable trends suggesting differences between the groups that were not statistically significant, possibly due to the small sample size. For example, there was a difference between the violent and nonviolent offender groups in terms of the number of inmates who were raised by both parents (48.3% and 34.1%, respectively). It is interesting that more of the violent offenders were raised by both parents than were nonviolent offenders. No past studies were found that examined this specific variable, but it was reported by Klassen and O'Connor (1988) that the loss of a parent to death or separation was associated with violent behavior in individuals with schizophrenia, which is inconsistent with the findings in this study. In addition, being separated from either biological parent by the age of 16, unless the separation was due to death of the parent, is considered a risk factor on the Violence Risk Appraisal Guide (VRAG; Quincy, Harris, Rice, & Cormier, 2006). Again, these findings are inconsistent with the findings of the current study, in which violent offenders were more likely to be raised by both parents than were nonviolent offenders. In yet another study with contrasting results, Nijman et al. (2003) found that 85% of patients with psychosis had been raised by their grandparents. This is not at all consistent with the findings in the current study in which only 2.3% of nonviolent offenders and 3.4% of violent offenders had been raised by their grandparents. Nijman et al.'s study consisted of participants from Germany and Sweden, however, which may account for the inconsistency when compared to individuals primarily from the United States, and more specifically Oregon.

Another notable difference between the two groups in the current study was seen in employment data: 63.6% of nonviolent offenders and 44.8% of violent offenders had not been employed in the six months prior to their arrest. Again, these results are not consistent with the findings of Klassen and O'Connor (1988); they found that unemployment was more commonly associated with violent behavior in individuals with psychotic disorders than it was with nonviolent criminal behaviors.

There was also a rather large difference in the number of Caucasian and African American individuals in each of the current groups. The nonviolent group had 56.8% Caucasian and 18.2% African American individuals. In the violent group there were 79.3% Caucasian and 3.4% African American individuals. The reason for this discrepancy was unknown. Corrigan and Watson (2005) found that Hispanic Americans were twice more likely to report violent behavior than were African Americans or European Americans. This appears to be inconsistent with the findings of this study in which only 10.3% of Latino/Hispanic subjects that had committed violent offenses. It is important to clarify that these findings in Corrigan and Watson's study included the entire sample (i.e., psychotic and nonpsychotic) rather than just the psychotic individuals, and thus the nature of the sample could account for the discrepancies in the studies.

Marital status also differed between nonviolent and violent psychotic offenders. It was found that 63.6% of nonviolent offenders and 41.4% of violent offenders in the current study were single. There was also a noticeable difference between the two groups in divorce; 22.7% of nonviolent offenders and 37.9% of violent offenders had been divorced. Most prior researchers who examined marital status compared individuals with a psychotic disorder to those without a psychotic disorder (Ashford, 1989; Matejkoski et

al., 2008). These researchers found that individuals with a psychotic disorder were less likely to be married than were those without a psychotic disorder. Because no individuals without a psychotic diagnosis were included in the current study, such a comparison was not possible, although the current findings are consistent with these past studies in that it appears more likely for individuals with psychotic disorders to be single rather than married.

In the current study, there was a predictable difference in offenders' histories of violence before the age of 15. Nonviolent offenders tended to report not having a violent history more often than did violent offenders (31.8% and 17.2%, respectively). In Ashford's (1989) study, a significant difference between individuals with and without severe mental illness was found in violence history (36% and 22%, respectively, had a history of violence). Although the comparisons are not equivalent with the current study, both studies appear to show that a history of violence is often a factor for individuals with severe mental illness, which may include psychotic disorders. In a review of literature, Arboleda-Florez et al. (1998) suggested that, although a causal relationship could not be inferred from available literature at the time of their review, one of the common findings in the research was that individuals who had a history of violence were likely to reoffend when released from hospital, jail, or prison settings.

Although there was not a large difference between groups in the current study in abuse of substances, it is notable that a large majority of both groups had a history of substance abuse (90.9% in the nonviolent group and 82.8% in the violent group). This is consistent with many studies suggesting that substance abuse is often associated with

criminal behavior (James & Glaze, 2006; Laajasalo & Hakkanen, 2004; Matejkowski et al., 2008; Muntaner et al., 1998; Tengstrom et al., 2004).

In sum, the current exploratory study resulted in some interesting differences between nonviolent and violent offenders with psychotic disorders. There was only one significant difference between the groups (age of psychotic onset), possibly due to the small sample size, but other noticeable differences did exist. This is the only known study to date in which violent and nonviolent offenders diagnosed with psychotic disorders were compared, so there were no studies for direct comparison. However, some prior researchers looked at similar variables in individuals with a psychotic disorder. As noted above, some of the findings in this study seemed to be consistent with past findings (e.g., unemployment, history of violence, and marital status), whereas others were inconsistent (e.g., ethnicity and type of parent/guardian figure present in the childhood home).

Strengths and Limitations of the Current Study

The primary strength of the current study is that it is the first known attempt to examine differences between nonviolent and violent offenders who have been diagnosed with a psychotic disorder. The study included a number of variables that could serve a starting point for future research in terms of possible variables to examine further, such as employment, ethnicity, marital status, history of violence, and substance abuse. An additional strength is that a records review was conducted, and thus there was a check on the consistency of the information gathered.

Some limitations should be considered when interpreting the results of this study. First, the size of the sample was small, especially when it was separated into two subgroups. When analyzing the data, many of the comparisons seemed to yield large

differences in percentages that were not significant, which may have reflected the small sample size. Along the same lines, the imbalance in size of the two groups may have affected the analysis; the nonviolent group consisted of 44 inmates and the violent group consisted of 29 inmates.

Second, many variables could not be scored for each individual, resulting in a large amount of missing data. This difficulty was due to the variability of the contents of inmate files. Excluding data for those inmates who did not have all the variables accounted for would have resulted in an even smaller sample size. Missing data may have also played a part in the limited number of significant results. An additional problem was that there was also inconsistency within files for the same variable. For this study, the most recent information was used, but the accuracy of the information was ultimately unknown in these cases.

Third, only some files were available to examine. The randomly generated list that was provided often listed inmates for whom files were housed at another institution due to limited space at OISC. The list also often included names of inmates who had been reincarcerated; therefore, those files were no longer available. The list consisted of inmates who had MH3 status, which included more diagnoses than just psychotic disorders. Due to these constraints, only about 25% of the listed inmates could be included in the current study. This problem in turn affected the sample size because the number of files of violent offenders with psychotic disorders housed at OISC was exhausted.

<div align="center">Future Directions</div>

In future studies comparing nonviolent and violent offenders with psychotic disorders, it may be beneficial to utilize other records in addition to prison files, such as probation and parole records, pre-sentence investigations, police records, and any other records that could provide important information. It may also be informative to conduct interviews with participants to ensure more accurate information. A larger sample is also recommended for future research, as well as more equally sized groups. The small sample size in this study may be the reason there were so few significant findings. If possible, it is also suggested that a more efficient way of gathering data be utilized (e.g., a list that includes specific diagnoses and generates only usable files).

It may also be interesting to expand the study design to include violent and nonviolent offenders who do not have a psychotic disorder. Data could then be compared between violent and nonviolent offenders with and without psychotic diagnoses.

Conclusions

The results of this study indicate that there were apparent differences between violent and nonviolent offenders with psychotic disorders on several variables: age of onset of psychosis, type of parent/guardian figure present in the childhood home, employment, marital status, ethnicity, and history of violence before the age of 18). Only one factor, age of onset, was determined to be significant in this study. More specifically, individuals in the violent offender group more often experienced psychotic onset between the ages of 15 to 19, whereas individuals in the nonviolent group more often experienced psychotic onset before the age of 15 or between the ages of 20 to 29. Other factors may have been found to be significant with a larger sample size.

Individuals with severe mental illness, and more specifically, psychotic disorders, have become more present in the criminal justice system in the last few decades (HRW, 2003). Understanding background and historical factors that may be associated with crime, violent and nonviolent, is an important step in identifying and preventing these individuals from becoming involved in the system. More research in the area of risk assessment for this population is warranted and is an important step in reducing the number of psychotic individuals in jails and prisons.

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APPENDIX A

Crime :   Violent   Non-violent

Age at time of arrest: 15-19   20-29   30- 39   40-49   50+

Race: Caucasian   African American   Latino/Hispanic

                                        Asian American   Native American   Other

Marital Status :   Single   Married   Divorced   Separated

Widowed

Parents' marital status before the age of 18:   Single   Married   Divorced

                                                                        Separated   Widowed

Raised by: Both parents   Mother   Father   Grandparents   Other _____

Employment 6 mo. prior to arrest: Yes   No

Highest grade level completed: _____

Current conviction:

_____

DSM diagnoses:

_____

Age of psychotic onset: Before 15   15-19   20-29   30-39   40+

Age of 1st conviction: Before 15   15-19   20-29   30-39   40+

Homeless 6 mo. prior to arrest: Yes   No

Psychiatric treatment before arrest: Yes   No

If yes: types _____   Dates _____

Inpatient Treatment: Yes   No

          If yes: types _____   Dates _____

Medication for MI 6 mo. prior to arrest: Yes   No

          Specify?   _____

Probation revocation: Yes   No

          Date(s) _____

Segregation: Yes   No

          How many times: _____

       Reason:_____

History of abuse before the age of 18:   Yes   No

          Type_____   By whom?_____

History of substance abuse: Yes   No   What?_____

Family history of crime?   Yes   No

          Specify:_____

History of violence before age of 18:   Yes   No