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LOMA LINDA UNIVERSITY  
School of Behavioral Health  
in conjunction with the  
Department of Psychology

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The Association Between Stigma and Violence among Individuals with Schizophrenia

by

Christopher Law

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A Project submitted in partial satisfaction of  
the requirements for the degree  
Doctor of Psychology


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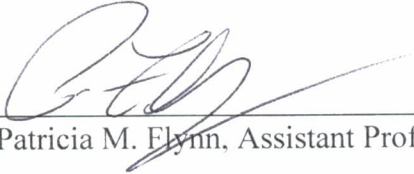
September 2021

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Each person whose signature appears below certifies that this project in his/her opinion is adequate, in scope and quality, as a project for the degree Doctor of Psychology.

  
\_\_\_\_\_, Chairperson  
Colleen A. Brenner, Associate Professor of Psychology

  
\_\_\_\_\_  
Patricia M. Flynn, Assistant Professor of Psychology

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To my fiancé, son, friends, and family, your love and support through this long journey has given me the courage and drive to pursue my dream and continue on with my career.

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## ABBREVIATIONS

IWS

Individuals with Schizophrenia

## ABSTRACT OF THE DOCTORAL PROJECT

The Association Between Stigma and Violence among Individuals with Schizophrenia

by

Christopher Law

Doctor of Psychology, Graduate Program in Psychology

Loma Linda University, September 2021

Dr. Colleen Brenner, Chairperson

Schizophrenia is a psychotic disorder characterized by positive, negative, and cognitive symptoms. Individuals with schizophrenia (IWS) are often stigmatized and portrayed as dangerous. While the majority of IWS are not dangerous or violent, this image of the dangerous IWS is still pervasive across different cultures. Apart from the individuals who have exhibited antisocial traits prior to the onset of their psychosis, medication can significantly reduce the risk for aggressive and violent behaviors among IWS. However, as the literature reveals, medication noncompliance has become an significant issue among IWS. Studies show that stigmatization of schizophrenia has significantly contributed to individuals not adhering to their medication. The purpose of this literature review was to investigate the relationship between stigma and violence among IWS. However, research for this review revealed that there was limited research linking the relationship between stigma and violence. Furthermore, literature revealed that both stigma and violence were correlated with medication adherence. Research on stigma and medication adherence revealed that IWS who experienced increased stigma regarding schizophrenia, were less likely to adhere to their medication.

Additionally, even when treatment was mandatory or heavily regulated (e.g. treatment was supervised and enforced), treatment would yield insignificant results for

individuals who felt stigmatized. Furthermore, failure to become fully adherent to schizophrenia treatment increased the risk for IWS to engage in violent behaviors. In conclusion, medication adherence can significantly mitigate the risk for violent behaviors among IWS. It has also been shown through the literature that stigma is negatively associated with medication adherence. Stigma has also been shown to affect treatment efficacy. Because the perception of stigma can significantly impact treatment outcomes, there should be a greater emphasis on stigma in treatment for IWS. Furthermore, because there is limited research on the association between stigma and violent behaviors among IWS, more research on this topic is needed.

# **CHAPTER ONE**

## **INTRODUCTION**

Schizophrenia is a psychotic disorder that is characterized by positive, negative and cognitive symptoms. The positive symptoms refer to an excess or distortion of experiences which can include, but are not limited to, symptoms such as: hallucinations, delusions, and paranoia (Preda, 2020). The negative symptoms result in the loss or diminished ability to function and can include but are not limited to symptoms such as: apathy, lack of emotion, and poor social functioning (Jibson et al., 2004). Individuals with schizophrenia (IWS) also typically experience general psychopathology such as somatic concerns, anxiety, guilt, tension, depression, and motor deficits (Tracy, 2016). IWS also exhibit cognitive deficits in the form of disorganized thoughts, difficulty concentrating, and memory problems. Finally, IWS experience a wide array of social deficits such as social anhedonia, difficulty navigating social situations, and lack of social skills (Tracy, 2016). In summary, IWS experience a wide range of deficits in several different domains of cognition, behavior, and socialization.

IWS often experience stigma, or shame. In many cases, this stigma is manifest in the belief that IWS are dangerous (Angermeyer and Matschinger, 2003). The purpose of this review is to explore whether stigma influences violent behaviors IWS through treatment noncompliance. The hypothesis is that stigma lowers treatment seeking & compliance in IWS, and the resulting non/under-treatment of the disorder increases the rate of violent behaviors in this population. While there are currently no studies that explore the relationship between stigma and violent behaviors in IWS, a thorough review of the literature in these areas may clarify this important public health question and

subsequently direct treatment guidelines.

### **Demographics**

While the rate of schizophrenia is similar between males and females, manifestation of the disorder does differ between the sexes (Bhugra, 2005). Most studies reported that males have an earlier age of onset, however the reported age varies for each study. A meta-analysis found that gender differences of the age of onset varied depending on whether the Diagnostic and Statistical Manual of Mental Disorders (DSM) or International Classification of Diseases (ICD) was used. There were greater differences found in studies using the DSM, while no gender differences were found in studies using the ICD (Eranti et al., 2013). Females with schizophrenia have been found to have less severe symptomatology than males. Estrogen, a sex hormone mostly associated with females, has been shown to have a negative correlation with symptom severity with both males and females. A positive correlation was also found for estrogen levels and neurocognition in patients with schizophrenia, although this effect was mainly found in females. Testosterone, a sex hormone mostly associated with males, has been found to be negatively correlated with negative symptoms, meaning as testosterone increases, negative symptoms decreases. The results for the effect of testosterone on neurocognition has been found to have been inconclusive (Silva and Ravindran, 2015).

While schizophrenia affects every race, the reported diagnosis for African American and Latino American groups are disproportionately higher than diagnosis for Caucasian Americans. In the United States, African Americans were 3-fold more likely than Caucasian Americans to be diagnosed with schizophrenia (Bresnahan et al., 2007).

When adjusting for family SES at birth, African Americans were still 2-fold more likely than Caucasian Americans to be diagnosed with schizophrenia (Bresnahan et al., 2007). Blow et al. (2004) found that among veterans, African Americans were 4 times more likely to be diagnosed with schizophrenia than Caucasian Americans, while Hispanics were 3 times more likely to be diagnosed with schizophrenia than Caucasian Americans (Blow et al., 2004). Clinician bias and sociological causes may contribute to this higher rate of diagnosis of schizophrenia among minorities (Shwartz and Blankenship, 2014)

### **Media Influence on Stigma**

The idea that IWS are more dangerous than the general population is widespread. Like many other disorders, schizophrenia is one that is typically represented in the media as dangerous (Ferriman, 2000). Examples of this misrepresentation can be seen in Hollywood movies like Psycho and Shutter Island, which portray psychotic disorders in a severely negative light. This belief is also perpetuated through different mediums in society. Lampropoulos et al. (2017) conducted a study analyzing articles from 2015, from eight major newspapers (four national and four regional) in France, that used the term schizophrenia. The study found that about 40% of articles that used the term “schizophrenia”, used it metaphorically, while around 28% of the articles used the term “schizophrenia” to refer to dangerousness (Lampropoulos et al., 2017). While the extent of media’s influence on public attitudes in France is unclear, Angermeyer found that people in France had a much more unfavorable view towards schizophrenia than they did for major depressive disorder. Responders were more likely to distance themselves from people with schizophrenia than major depressive disorder by using terms that separate

“us” from “them”. They were also more likely to experience fear and less likely to experience prosocial feelings for those with schizophrenia (Angermeyer et al., 2013).

### **Stigma of Schizophrenia**

In general, stigma can be broken down into two categories: internalizing and externalizing stigma. Externalizing stigma refers to stigma that exists “outside” of the individual (e.g. being called a racial slur by a stranger). Internalizing stigma refers to the “internalization or absorption of negative attitudes” (e.g. believing you have limitations because of your race or gender) (Gray, 2002).

Within the general population, both schizophrenia and depression are viewed as predictors for poor outcomes. However, schizophrenia alone was perceived to be dangerous, while depression was not (Angermeyer and Matschinger, 2003). This perception of dangerousness was found to be mitigated through education. When individuals were more educated about mental health, they were less likely to be fearful of IWS. However, while education does help to reduce fear towards IWS, educated individuals still retain some bias and stigma regarding the dangerousness of the disorder (Angermeyer et al., 2004). While medical students tended to view schizophrenia in a better light than the general population, perceptions of danger became heightened when they made personal contact with someone with the disorder (Thompson et al., 2002). Similarly, a cross sectional study found that 38% of participants with schizophrenia reported feeling discriminated against and mistreated by mental health staff (Harangozo et al., 2013).

In Germany, Angermeyer and Matschinger found that perceived dangerousness

was a popular stereotype endorsed by the public, while unpredictability and incompetence were also highly endorsed as traits of schizophrenia. In response, participants with schizophrenia who experienced these types of stigma were more likely to distance themselves from other people (2004). Stigma towards schizophrenia has been found to be a cross-cultural phenomenon. Participants with schizophrenia and their family members in Morocco reported that people often believed that schizophrenia was an incurable, severe, chronic, and handicapping disease. Some even believed that schizophrenia was the result of sorcery (Kadri et al., 2004).

In India, when schizophrenia was compared alongside bipolar disorder and recurrent depressive disorders, patients with schizophrenia reported higher levels of alienation, stereotype endorsement, discrimination experience, and total stigma than patients with bipolar disorder or a recurrent depressive disorder. In the same study, patients with schizophrenia were more likely to report stigma in all subscales (i.e. alienation, stereotype endorsement, discrimination experience, social withdrawal, and stigma resistance) of the Internalized Stigma of Mental Illness Scale (Grover et al., 2017). Another study in India found that internalizing stigma for schizophrenia was particularly higher among IWS who exhibited higher levels of positive symptoms, lower levels of negative symptoms, higher caregiver knowledge about symptomology, younger age, and not having a source of drinking water in their home (which is an indicator of economic deprivation) (Koschorke et al., 2014).

Family members of those with schizophrenia also endorse stigmatizing beliefs about this disorder. A study by Lee et al. (2006) found that when comparing patients with schizophrenia to those with diabetes, patients with schizophrenia were more likely to



experience externalizing stigma from family members, partners, friends, and colleagues. Over half of the participants reported that these stigmatizing experiences led to feelings of dysphoria. In a study conducted by Farrelly et al. (2014), individuals with major depressive disorder, bipolar disorder, and schizophrenia reported experiencing discrimination in different settings, including employment and relationships. They were also asked to report on anticipated discrimination, which is the amount the individual expects to be discriminated against. Discrimination from others was experienced by 87% of participants with schizophrenia, bipolar disorder, and major depressive disorder. Additionally, they found that 92.6% of IWS had anticipated discrimination, meaning that they expected to be targeted for discrimination (Farely et al., 2014). In summary, stigma towards schizophrenia is a pervasive, cross cultural phenomenon that influences the beliefs and behaviors of IWS.

### **Schizophrenia and Dangerousness**

Even though danger is widely believed to be associated with schizophrenia, the risk of violence from IWS is consistently low across different countries. In America, 2.7% of individuals who committed violence had schizophrenia (Swanson et al., 1990). In a Finnish study, 4% of violent crime was committed by IWS (Tiihonen et al,1997). In a Danish study, it was found that 2% of males and 9% females of IWS who were born between January 1, 1944 and December 31, 1947, had committed violent crimes (Brennan et al., 2000). It is possible that the reason the rate of violence is so low among IWS is because the rate of schizophrenia is low, since it affects 1.1% of the world's population. While the rate of violence is low among IWS, it is important that the violence

is not dismissed. If the risk factors for violent behavior in this population are known, intervention can occur.

For the purposes of this review, violence and aggression will include all types of violence/aggression. The reason for this is that violence and aggression itself are difficult to define. One reason for this is that not everyone agrees with what should be considered an act of violence. The other reason why violence is broadly defined in this review is that violence is not well defined in the studies cited. For example, many studies in this review focus on violence but do not specify what type of violence was committed (e.g. homicide, stalking, fighting, etc.).

### **Neuropsychological Differences and Violence**

While there are IWS who commit violent acts, the majority of these IWS do not behave violently. To understand why certain IWS behave violently, it is important to investigate what differentiates patients with violent behaviors and those without. When both IWS with a history of violent behavior and those without a history of violent behavior underwent neuropsychological testing, the group with a history of violent acts performed worse on measures of memory and executive functioning. It was also found that the violent group had a worse Intellectual Functioning composite score than the nonviolent sample. These findings could indicate that there are neurological deficits, independent of symptoms, which influence these violent behaviors (Stratton et al., 2018). Another study presented patients with an inhibitory control task, which required them to make quick responses to pictures. The pictures would occasionally appear twice, and the patients were told to withhold a response to repeated pictures. They found that the group

who had committed violent acts were more likely to respond to the repeated pictures than the nonviolent group, suggesting that there may be sensory-perceptual processing dysfunction found in patients with a history of aggression. While this inhibitory dysfunction is also present in individuals without a history of violent behavior, it is not as pronounced as it is in the group with a history of violent behavior (Sanctis et al., 2012). While most studies are consistent with regards to neuropsychological differences in IWS who have committed violence versus those who have not, one study was not consistent with these findings. This study found that IWS who had committed violence had better working memory and executive functioning than IWS who had not committed violent acts. Kashiwagi argued that better executive functioning is required to plan and commit violent acts (Kashiwagi et al., 2015).

In order to determine which domains are more associated with violent behaviors, Ahmed et al. (2018) recruited participants with schizophrenia and schizoaffective disorder, and placed them in groups based on their history of violent offenses. Violent behaviors were more likely to occur in individuals with deficits in working memory, reasoning/problem-solving, and verbal learning. They also exhibited greater levels of negative emotionality, excitement/agitation, and incidents of committing verbal and physical aggression. Negative emotionality and excitement/agitation were found to influence the level of cognitive deficits (Ahmed et al., 2018). In summary, IWS who have committed violent behaviors show unique neuropsychological and cognitive deficits that are not present in IWS without a history of aggressive or violent behaviors. Additionally, in some cases IWS with a history of violence, performed better than IWS without a history of violence, in domains of working memory and executive functioning, which

may be crucial skills for violent behaviors that require planning.

### **Violence and Neurological Differences**

There are also neurological differences between IWS who committed violent acts and IWS that had not committed violent acts. A study by Tikasz found that IWS who committed violent acts had a greater decrease in volume of the dorsolateral prefrontal cortex than IWS who have not committed any violent acts. When participants were undergoing a functional MRI (fMRI), they were asked to view static faces which included 4 women and 4 men displaying anger or neutral emotions. When IQ, impulsivity, and logistical errors were controlled for, they found that IWS who engaged in violent behavior showed decreased activation in the dorsolateral prefrontal cortex when the participants were exposed to the angry faces. This may suggest that IWS who have committed violent behaviors have difficulty regulating their emotions, since they have exhibited suppressed activation in the dorsolateral prefrontal cortex when they are exposed to angry faces. However, the violent behavior group also had reduced activation of the DLPFC during Angry-NoGo events and Angry-Go events. It was suggested by the authors that this phenomenon provides evidence that there may not be a specific interaction between emotion and cognitive control within IWS, and that the relationship between violent behaviors and emotions may be influenced by attention (Tikasz et al., 2017). Similarly, Frommann et al. (2013) found that IWS who have engaged in violent behavior demonstrated poor affect recognition performance in response to neutral and fear stimuli as was observed through event-related brain potentials. It was found that grey matter volume was negatively associated with emotional neglect, or lack of warmth and

attention during childhood, in patients with schizophrenia. There was a more specific negative association between emotional neglect and the right dorsolateral prefrontal cortex within IWS with a history of violent behavior (Cancel et al., 2015). Similar findings were reported within those without schizophrenia or a psychotic related disorder. Participants who had their right dorsolateral prefrontal cortex temporarily suppressed through the use of low frequency repetitive transcranial magnetic stimulation, were significantly more likely to engage in risky decision making (Knoch et al, 2006). Knoch et al. suggested that these results reveal that the right dorsolateral prefrontal cortex plays a role in controlling risky behavior. In summary IWS who have committed acts of violence exhibited lower DLPFC activation, have emotional recognition deficits, and exhibit similar neurobiological abnormalities as those who were emotionally neglected during childhood.

Additionally, other neurological abnormalities were found in IWS who were more likely to be aggressive. In non-psychotic patients, smaller amygdala size was associated with more violent behavior while in IWS smaller amygdala size was associated with less violent behavior (Bene et al., 2016). The amygdala, which is also part of the limbic system, is responsible for arousal, autonomic responses associated with fear, emotional responses, and memory (Bailey, 2018). Within a Chinese sample, reduced gray matter volume in the hippocampus and parahippocampal gyrus were found in IWS who had committed murders and in murderers who were not diagnosed with schizophrenia. They also found reduced prefrontal cortex volume in non-violent schizophrenia (Yang et al., 2010). The hippocampus is part of the limbic system and provides the functions of feeling and reacting. The hippocampus is also responsible for processing and retrieving

memories (Murrell, 2017). The prefrontal cortex is responsible with executive functioning (Dahlitz, 2017). In summary, IWS with a history of violence are more likely to exhibit neurological abnormalities in structures in the brain that are responsible for memory, emotional processing, and executive functioning.

### **Violence, Personality Traits, and Behaviors**

Certain personality traits and behaviors were also predictive of violent behavior among IWS. Among patients with early age of onset of psychosis, impulsivity predicted violent behavior, and this relationship was not mediated by substance abuse (Moulin et al., 2018). Along with impulsivity, hostility, positive symptoms, and substance use disorders were found to increase violent behavior within one subgroup of patients with psychosis. For another group within the study, low levels of insight and low social functioning were predictors of violent behaviors (Moulin et al., 2017). One study measured impulsivity using the Barratt Impulsiveness Scale and depression using the Positive and Negative Syndrome Scale Depression factor and the Modified Overt Aggression Scale to measure levels of aggression in inpatients with schizophrenia who had a history of physical aggression. They found a strong interaction between depression/impulsivity scores and the aggression scores such that patients who presented with higher levels of both depression and impulsivity were found to have higher levels of aggression. Therefore, it is possible that mood and personality traits affect aggressive and violent behaviors among those with schizophrenia (Krakowski & Czobar, 2013). A meta-analysis found that lower IQ, memory, and executive function are likely to be found in violent IWS and violent individuals with antisocial personality disorder (ASPD)

compared to healthy controls. This deficit was more pronounced in IWS than individuals with ASPD (Sedgwick et al., 2017).

### **Violence and Psychosocial Factors**

Within the general population, Reif et al. (2007) found a relationship between high childhood adversity and violent behavior. Violent behavior was also found to be associated with individuals who are younger, had less education, and were unemployed. Similarly, aggression levels were associated with lower family income (Caqueo-Urizar et al., 2016). With regards to IWS, Bennouna-Greene et al (2011) found that 46.4% of sampled patients with a history of violence who were recruited from a highly secured psychiatric unit, had experienced some form of abuse and/or neglect during childhood. From the same sample 21.4% had experienced more than 2 forms of abuse and/or neglect. The most frequent reported forms of abuse and neglect reported were physical abuse and emotional neglect. Overall, childhood adversity was found to increase the likelihood of an individual engaging in violent behavior in those with schizophrenia. The authors suggested that conduct disorder may mediate childhood adversities, like domestic violence, and later violent behavior after the onset of schizophrenia, however this hypothesis needs to be tested further (Oakley et al., 2016). Other literature also provides evidence that violence from IWS was associated with less education and being unemployed (Karabekiroglu et al., 2015).

IWS also show pervasive impairments in metacognition, which refers to the ability to conceptualize cognition of self and others (Pinkham, 2019). For patients who have psychopathic traits (a mental state defined by antisocial behavior and lack of

remorse and empathy), these impairments present differently than for those without psychopathic traits. IWS who scored above 24 on the Hare Psychopathy Checklist-Revised scale (PCL-R), which is close to cut off score (26) for diagnosing psychopathy in Europe, demonstrated better overall metacognitive abilities on the Metacognition Assessment Scale-Abbreviated (MAS-A) than IWS who scored below 24 on the PCL-R. The only exception to this was the Mastery subscale on the MAS-A, which is used to measure how well someone can use their mental states to solve social and psychological issues. Unlike the other areas of metacognition, IWS with symptoms of psychopathy displayed deficiencies in mastery. These results suggest that in IWS there is an association between higher metacognitive abilities and higher levels of psychopathy, with the exception of mastery. The preservation of these abilities may help IWS with psychopathy manipulate and extort victims (Abu-Akel et al., 2015). In contrast, a study by Bo et al., (2015) found that IWS with a history of violent behavior have deficits in metacognitive abilities. These findings may suggest that while psychopathy is associated with higher levels of metacognitive abilities, perhaps not all IWS who have committed a violent act have features of psychopathy, and that there may be other reasons for their engagement in violent behavior. In a separate study, IWS who also had a comorbid diagnosis of borderline personality disorder or bipolar disorder were more likely to engage in violent behaviors. It is likely that the increased tendency towards impulsivity that increases the likelihood of violent behaviors (Volavka, 2013). In summary, IWS with a history of violence display more abnormalities in the dorsolateral prefrontal cortex, which contributes to executive function and control, more specifically with working memory and selective attention. If the dorsolateral prefrontal cortex is impaired,



the individual's ability to control violent behaviors may be compromised, therefore putting the individual at risk for engaging in violent behavior.

### **Medical Non-Compliance in Schizophrenia**

The following section will briefly introduce the pervasive nature of medical non-compliance, defined as instances when a patient does not take a prescribed medication or follow a prescribed course of treatment, in IWS so that the relationship between stigma, medical non-compliance and violent behaviors may be thoroughly reviewed. Medication and treatment compliance or adherence in this review refers to when patients completely follow a provider's guidelines with regards to treatment. With regards to medication compliance, this would include the patient taking the correct dosage in the recommended timeline, as well as completing treatment recommendations (i.e. not stopping treatment without the doctor's approval). Treatment compliance is similar to medication compliance, but may also include non-medical related treatments, such as psychotherapy.

Saboo et al. (2015), collected data from 52 patients with schizophrenia from a hospital-based cross sectional study. The study revealed that 69% of patients showed poor compliance, 27% showed medium compliance, and 4% demonstrated a high compliance rate. Saboo et al. (2015) reported various factors for non-compliance among the patients, some of which included cost of medicine, transportation problems, medication related factors like side effects or lack of effectiveness, lack of knowledge, misconception about psychiatric disorders, and the patient's insight towards illness.

Krzystanek et al. (2015) collected data from 158 patients with paranoid schizophrenia, and evaluated their compliance over time. Within the first month, patients

confirmed that only 44.6% of the doses were taken. In the low compliance group, only 9.3% of the doses were taken. Compliance decreased by 25.2% after 6 months. In a separate study, out of 18 patients observed, 8 (44.4%) were found to be non-compliant (Yoller et al., 2016). In summary, a significant portion of IWS have reported noncompliance to medical treatment.

### **Summary**

These studies reveal that a diagnosis of schizophrenia alone is not enough to predict violent behaviors, and that violent behaviors can have biological, psychological, and social influences. Even though the data show that schizophrenia does not necessarily cause violent behaviors, there is still stigma regarding the dangerousness of this diagnosis. While there is an extensive literature on stigma experienced by IWS and extensive data on violent behaviors performed by IWS, there are limited studies that investigate the possible influence of stigma on violent behaviors in those with schizophrenia. To explore this topic further, the current study will review the literature on violent behaviors in those with schizophrenia, the relationship between treatment noncompliance and stigma, and the literature on treatment noncompliance and violent behaviors.

## **CHAPTER TWO**

### **METHODS**

The purpose of this literature review is to explore the relationship between stigma and violence through medical non-compliance in individuals with schizophrenia.

#### **Eligibility Criteria**

The review included articles that focused on schizophrenia or psychosis, stigma, violence, and medical adherence. The articles included in the review were limited to literature published between 2008-2018. Other reviews and meta-analyses were included in this review.

#### **Data Sources**

The following databases were used: PsycINFO, PubMed, and Google Scholar. The search terms used were: (schizophrenia, positive symptoms, violence) AND (schizophrenia, stigma, medical adherence) AND (schizophrenia, positive symptoms, medical adherence) AND (schizophrenia, treatment, antisocial) AND (schizophrenia, psychosocial treatment, antisocial) AND (schizophrenia, delusions, medication adherence) AND (psychotic disorders, stigma, medical adherence) AND (positive symptoms, stigma, schizophrenia) AND (schizophrenia, stigma, violence) AND (schizophrenia, stigma, discrimination) AND (schizophrenia, violence) AND (schizophrenia, medical nonadherence) AND (schizophrenia, forensic, stigma).

## **Study Selection**

### ***Inclusion***

- English
- Full text
- Published in the last 10 years
- Peer reviewed
- Original study
- Meta-Analyses
- Focus on schizophrenia and violence
- Focus on schizophrenia and medical noncompliance
- Focus on schizophrenia and stigma

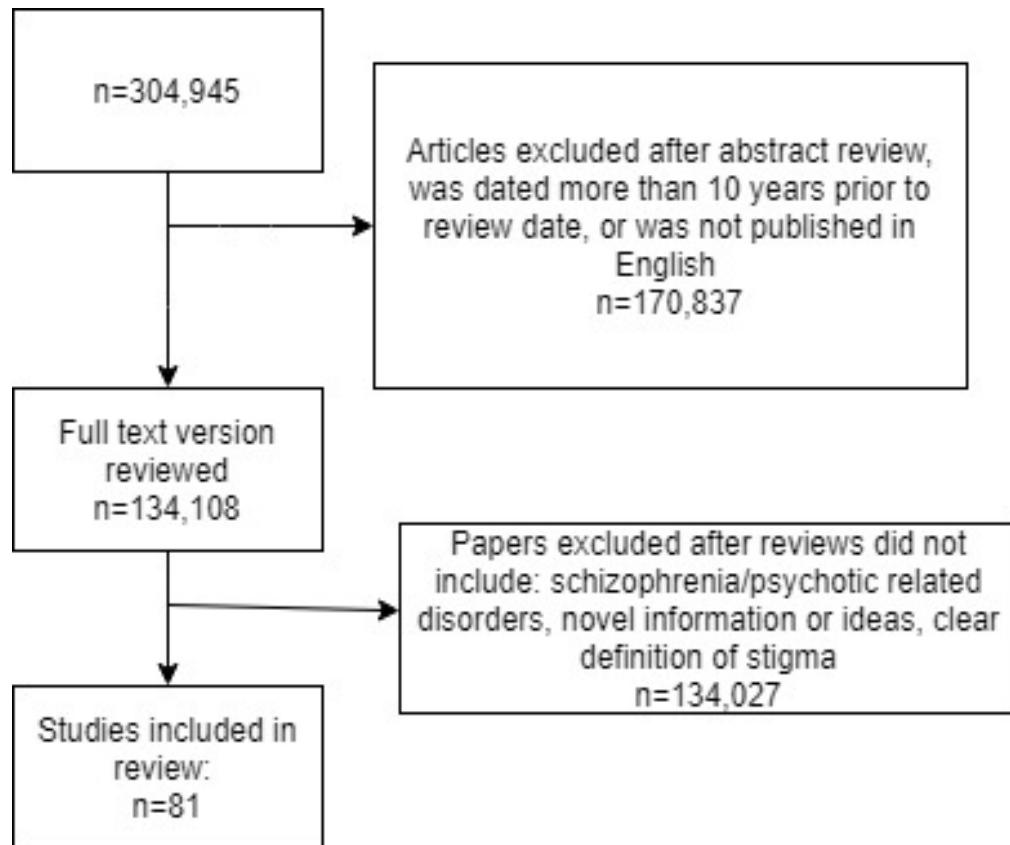
### ***Exclusion***

- Studies not including schizophrenia or a psychotic related disorder
- Non-English
- Studies not published within the last 10 years
- Studies without clearly defined term for stigma

## **Study Selection**

The original search returned 304,945 papers. 304,864 were excluded for having inappropriate or irrelevant information or for being published prior to 2008, based on an abstract and date review. 134,027 were excluded after a full text review due to

inappropriate/irrelevant focus, repetition of previously included studies, or lack of clear operationalization of stigma. The current narrative review will include the remaining 81 studies.



**Figure 1.** Study Selection

## **CHAPTER THREE**

### **REVIEW**

#### **Stigma and Treatment Adherence**

Across different medical and mental health conditions, stigma has been identified as a reason for poor treatment adherence and other treatment complications. The effects of this phenomenon has been documented among those with HIV. Individuals who carried HIV and experienced stigma were over four times more likely to report poor access to care, due to theirfear of being seen with HIV medication, which they believed could lead to poor social outcomes such as being abandoned by a romantic partner (Helms et al., 2016; Sayles et al., 2009).

The negative effects of stigma on nonadherence has also been documented across different mental disorders. In a study by Hajda et al. (2016), over half of participants with bipolar disorder had discontinued their medication. Adherence to medication was shown to be positively correlated with age and negatively with stigma. In their sample, over half of the participants had discontinued medication at least once in the past, and type of medication did not influence these variables. Furthermore, in another study where patients with psychosis were compared to groups of patients with anxiety and affective disorders, no statistically significant differences were found between groups on levels of self-stigma. Additionally, self-stigma negatively impacted medical adherence at similar rates among both groups. Furthermore, the level of self-stigma was not influenced by other demographic variables such as age, gender, marital status, or clinical diagnosis (Kalisova et al, 2018). In summary, stigma has a significant negative impact on

medication nonadherence, even when controlling for different demographic variables.

While stigma does not exclusively affect IWS, in many cases it seems to affect IWS more strongly than those with other conditions. While individuals with depression and IWS experienced more shame than those with rheumatoid arthritis, those with schizophrenia experienced a significant association between shame and depression that was not seen in the other groups (Keen et al., 2017). However, the effect of stigma could be ameliorated if the individual was employed, had a partner, and had higher levels of education (Holubova et al., 2016). This may be due to the fact that IWS had a more difficult time viewing their life as fulfilling and joyful when they experienced more self-stigmatization. Out of all of the categories captured in the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) scale, which includes a wide range of domains including: physical health, household, work, and school activities, only the quality of school/study was not perceived to be affected by stigma (Holubova et al., 2016). Holubova et al. (2016) also found that the subjective perspective of quality of life was negatively correlated with symptom severity, meaning that the more severe the symptoms, the lower the subjective quality of life. In addition, IWS reported increased levels of motivation and energy, which were negatively associated with stigmatization, after they were discharged from treatment (Wang et al., 2016).

The following sections will focus on the relationship between stigma and treatment adherence. Treatment adherence is typically defined as an individual's ability to follow the recommended treatment protocols that are designed by the treatment provider. In this review, both adherence to medication and psychosocial treatments will be evaluated. While medication adherence is the primary focus of this review as it is the

frontline treatment for IWS, psychosocial treatments can improve quality of life in IWS especially when used in conjunction with medication and are therefore included in this review.

### ***The Impact of Stigma on Medication Adherence in IWS***

While there are several barriers, both medical and psychosocial, that complicate medication adherence among IWS, the most common patient-reported barrier to treatment was stigma about taking the medication. In a study by Wang et al. (2016), 23.4% of patients reported high adherence to their medication prior to being discharged from an inpatient treatment facility, while only 1.6% of patients reported high adherence one month after they were discharged. These findings indicate that increased perceived stigma that is encountered outside of a treatment facility may lead to non-adherence to medication (Wang et al., 2016).

Negative attitudes towards medication can include doubts of its utility or assumptions of negative social interactions that can arise from the discovery of their drug usage. For first-episode psychotic patients, negative attitudes towards medication was one of the strongest predictors for poor medication adherence in the first 2 years of treatment (Quach et al., 2009). Even after controlling for family history of mental disorder, gender, partnership status, and levels of education, self-stigma still had a negative correlation with treatment adherence. Furthermore, the level of self-stigma was not affected by age, age of illness onset, number of hospitalizations, number of outpatient psychiatry visits, severity of illness, or usage of antipsychotic dosages (Vrbova et al., 2014).

For many individuals who take antipsychotic medication, stigma regarding the



medication can lead to unwanted disclosure of illness, as well as cause difficulties in the workplace, and even family rejection, which can then lead to treatment nonadherence (Sajatovic & Jenkins, 2007). IWS are not the only ones who experience stigma regarding schizophrenia. Sometimes family members and caregivers can also experience stigma or feel burdened by the stigmatizing beliefs. Reports taken from caretakers reveal common themes of beliefs that taking care of someone with schizophrenia will lead to a disruption in their life and life plans (Rudge & Morse, 2004). Self-stigma increases when individuals experience stigmatizing beliefs or actions. If caretakers and family members are experiencing stigmatizing beliefs, it is likely that these beliefs are being passed on to IWS.

The shameful feelings that may be associated with taking medication did not change with the method of medication intake or with the type of medication taken. Both IWS who had taken their medication orally and those who had taken it through injection had negative attitudes towards medication. Prescription of first- or second-generation antipsychotics were both associated with negative attitudes towards medication (Loffler et al., 2003). The experiment conducted by Mert et al. (2015) confirmed that not accepting a diagnosis of schizophrenia was a reason why many IWS chose to avoid taking their medication. This was also confirmed by Rudge & Morse (2004) who found that their participants did not want to admit they have schizophrenia. Some patients have also claimed that taking medication would negatively affect aspects of their self-esteem like: sense of agency, self-efficacy, and self-worth. Essentially, many IWS do not want to take the medication so that they can feel like they have control over their functioning (Tranulis et al., 2011). This idea was supported by a study conducted by Hui et al. (2006)

who reported that many IWS do not want to take medication due to embarrassment. Similarly, another study found that IWS patients endorsed beliefs of helplessness, which included feeling like they were a failure or that they were “not going to make it”. Patients also reported being made fun of for taking antipsychotic medication (Swarbrick & Roe, 2011). Mezey et al. (2016) has confirmed that stigmatization can cause individuals to hide their mental health issues, which may help to explain why stigmatized individuals are more likely to become nonadherent towards their medication.

An individual’s attitude toward psychiatric medication can also be influenced by the name the medication is given. Patients have shown preference towards medication with more socially acceptable names. Medication names that allude to it being an antipsychotic are viewed as unfavorable. Patients reported that they preferred names that meant “psych-relaxing drug” instead of ones that could be defined as “anti-psych drug”. While patients reported that the name of the medication contributed to their self-stigmatization, over half of the participants were not even aware of the name of their medication. According to the participants, there was a lack of communication between them and their providers, regarding the names of the medication, and what the medication was for (Lau et al., 2014). In summary, negative attitudes towards medication can contribute to medication nonadherence. The more stigmatized or alienated that IWS felt about their illness, the more likely they had a more a negative attitude towards medication (Uhlmann et al., 2014). Uhlmann et al. (2014) proposed that psychological treatments should focus on helping the patients feel less like an outsider, which would ideally minimize stigmatizing beliefs. In treatment, addressing subjective norms can improve medication adherence. In one study, Kopelowicz et al. (2015) performed an

intervention that involved using the patient's relatives to challenge any stigmatizing beliefs that the patient had regarding their medication. Kopelowicz et al. (2015) found that whenever clinicians would take the time to address stigmatizing beliefs, the patients were more willing to adhere to their medication. Further studies are needed to understand self-stigma and how it affects individuals. Since being able to have relatives of IWS challenge stigmatizing beliefs was enough to improve medication adherence, the way clinicians approach interventions should be reevaluated. If addressing external sources of stigma can be helpful, then public health interventions should be evaluated, which would address more of the social aspect of the biopsychosocial approach. While many studies provide evidence for the association between stigma and medication nonadherence, not all studies support that relationship. A Swedish study evaluated stigma, using the Discrimination and Stigma Scale (DISC) and medication adherence in 111 outpatients with schizophrenia and schizophrenia-like psychosis. It was found that there was no significant association found between adherence and levels of stigma. The author suggested that selection bias may have contributed to the outcome of the study, since it is likely that there was an association between willingness to participate in the study and adherence towards medication (Brain et al., 2014).

### ***The Impact of Stigma on Psychosocial Treatments***

High levels of self-stigma in IWS can also lead to poor adherence to psychosocial treatment. However, the risk of self-stigma can be protected by higher levels of self-esteem which has been associated with better adherence to psychosocial treatment (Fung et al., 2008). Results from the study conducted by Fung et al. (2008) suggested

acceptance of external stigma as truth by IWS was associated with reduced psychosocial treatment adherence. The data revealed that self-stigma can have a direct and indirect effect on psychosocial treatment adherence, and that indirect effects of self-stigma are mediated by insight and stages of change (Fung et al., 2008). Overall, because of the high levels of shame and stigma that is ascribed to schizophrenia, many patients with schizophrenia will themselves experience self-stigma, which can lead to a decrease in psychosocial treatment adherence. However, more research on this relationship is needed since most adherence literature is focused on medication and not psychosocial treatments.

The following study focuses on a specific psychosocial intervention that was attempted by the authors. The study conducted by Livingston et al. (2013) demonstrated that stigma could possibly interfere with interventions that are intended to increase patient involvement in treatment, within a forensic mental health setting. In this particular study, a peer support program was utilized. The program included a peer support worker, which was someone who was in recovery with mental health and substance use disorders with training in counseling. The program included support groups and individual-based peer support, which involved having patients work with a peer support worker on a one-on-one basis. These interventions were intended to create safe spaces for patients, where they could openly discuss recovery issues that were centered on their mental illness and substance use problems with others who could relate to their experience. The peer support workers' role was to act like a role model for recovery by sharing information about their own recovery. The peer support program was successful in getting forensic inpatients to participate in treatment. However, patient involvement in the program did not significantly improve some other areas of patient care. The peer support program only

had minimal impact on internalized stigma, personal recovery, personal empowerment, service engagement, and recovery orientation of services, which are systems designed to support the autonomy and self-determination of individuals with mental illness to help them reintegrate in society and find purpose in their lives. In summary, even with the utilization of treatment participation interventions, when patients were still experiencing internalized stigma, other treatment factors did not improve. This study highlights the idea that attendance in mental health treatment is still insufficient and that the presence of stigma will complicate treatment.

A study in Ethiopia confirmed that almost half of participants who discontinued treatment reported that the main reason they discontinued treatment was due to stigma. This relationship was further explained by the participants who reported that there were feelings of shame related to having schizophrenia. Furthermore, being labeled with schizophrenia led to IWS being harassed or being avoided by peers (Assefa et al., 2012 ). However, in a study evaluating self-stigma and quality of life among patients in a compulsory outpatient program, there was no statistically significant relationship between self-stigma, at baseline, and quality of life. (Livingston, 2012). While this study challenges the idea that stigma can significantly account for adverse treatment outcomes, further studies are needed to confirm this. One possible limitation is that this was a cross sectional study. The lack of significance in the relationship between quality of life and stigmatization may be due to a cohort effect in the study. A different study utilizing a different methodology, like longitudinal or cross sequential methods, may yield different results. While this article may suggest that the relationship between stigma and treatment outcomes is insignificant, further studies are needed to confirm this.

### *The Impact of Stigma in Psychiatric Forensic Populations*

While stigma research on schizophrenia patients have been well researched, there is little research regarding the impact of stigma on mental health treatment in the forensic settings. The research on the effects of both the schizophrenia and forensic stigma is minimal and limited, but it would be important to explore for the topic of violence, since violent behaviors may be more likely to be perpetrated when individuals are not adhering to their medication regimes. West et al. (2015) investigated the impact of stigma on mental health and treatment outcomes on the forensic mental health population. The diagnosis of the participants included the following disorders: schizophrenia (30.5%), bipolar disorder (23.2%), schizoaffective disorder (17.1%), major depressive disorder (11.0%), other psychotic disorder (7.3%), PTSD/Other anxiety disorder (6.1%) and mood disorder, and not otherwise specified (4.9%). The crimes committed by the participants mostly consisted of drug related charges and attempted murder/assault. Participants who experienced higher levels of self-stigma also experienced a set of other mental health and treatment complications which include: higher depression, low self-esteem, and lower reported medication adherence, even when criminal self-stigma was accounted for. This means that mental health stigma was sufficient enough to explain some adverse mental health and treatment outcomes (West et al., 2015).

When other variables are accounted for, criminal self-stigma may not affect medication adherence directly. This may be because the messages that forensic psychiatric patients often tell themselves, as a result of stigma, is that when they leave the psychiatric facility they will experience abuse, neglect, educational and occupational failures (Mezey et al., 2010). Therapy goals, like building a sense of self-acceptance,

were not sufficient to counteract the negative effects of stigmatization, especially if they continued to experienced stigmatization from their loved ones. Both the stigmatization of being an offender and someone with serious mental illness was cited as a barrier to treatment. Being a part of two different highly stigmatized groups (forensic patient and IWS) may complicate treatment, since it may cause individuals to feel more comfortable staying in the facility rather than reintegrating back into society (Mezey et al., 2010).

Simply being a part of the forensic population can be stigmatizing. Overall, experiences of self-stigma and discrimination did not differ significantly between individuals who were part of the general adult psychiatric population and those belonging to the forensic adult psychiatric population. The participants in both groups reported that they experienced the most stigma when they were trying to make or keep friends, from their family, and mental health staff. The participants also reported that they were avoided or shunned by others, and that their experiences of stigma had caused them to hide their mental health issues from other people. The authors had predicted that individuals who experienced paranoid symptomatology would be associated with more stigmatization. However, severity of psychopathology only had a weak association with stigma. After controlling for psychopathology, there was no significant difference in self-stigma and discrimination between the general psychiatric population and the forensic psychiatric population (Mezey et al., 2016). This study could suggest that psychiatric individuals, who have committed criminal offenses do not experience stigma differently than psychiatric individuals that have not committed any criminal offenses. It is likely that there were no significant differences because schizophrenia is already stigmatized as a violent disorder, so IWS who are in non-forensic psychiatric facilities may experience

the same stigmatization that those in forensic psychiatric facilities experience.

### **Medication Adherence and Violence**

The previous sections reviewed the data showing that stigma can influence medication adherence behaviors among IWS. The following sections will review the literature that evaluates the relationship between medication adherence and violent behaviors in IWS. However, studying the relationship between any phenomenon and violence poses a significant challenge in itself since violence and aggression are difficult to define and represent statistically. Because of the difficulty in defining violence, several studies did not define their inclusionary or exclusionary criteria for violence. With respect to this review, articles that included any form of violence defined by the author were included. We recognize that this represents a variety of different types of violence ranging from implied threats, verbal aggression to physical assault. However, given the dearth of information on this topic, a wide review of the literature was deemed appropriate.

The literature reveals that medication adherence can significantly reduce violent behaviors, even after 6 months of treatment. However, medication only significantly reduced violent behaviors in IWS who did not have a history of conduct problems (Volavka, 2013). While medication can reduce violent behaviors in IWS with a history of conduct problems, the overall impact on conduct behavior is insignificant. These results suggest that for IWS with a history of conduct behaviors prior to the onset of schizophrenia, medication will likely not reduce violent outcomes since the violent behaviors they committed are not associated with their psychotic features (Volavka,



2013).

With regards to reducing violent behaviors, there were no significant differences in outcomes between different antipsychotic medications. Different types of antipsychotics have similar effectiveness for reducing violence. While second-generation antipsychotics were expected to outperform perphenazine, a first-generation antipsychotic, there were no real advantages for utilizing second-generation antipsychotics to reduce violence. Initial results gave off the impression that quetiapine, a second-generation antipsychotic performed worse than perphenazine. However, at the 6 months follow up period, all antipsychotic drugs were proven effective in reducing violent behaviors among IWS (Swanson et al., 2008).

Caqueo-Urizar et al. (2016) confirmed that many IWS who have committed a violent act, have been shown to have low adherence to treatment. This relationship could likely be explained by the fact that IWS who were nonadherent had more severe levels of psychotic symptomatology, such as positive and negative symptoms. It is important to note that even a slight deviation from the treatment plan can disrupt the progress that an IWS has made. Even brief periods of partial nonadherence of an antipsychotic can increase the risk of relapse for positive symptoms (Subotnik et al., 2011).

### ***Medication Adherence and Violence in a Forensic Populations***

Within a UK Prisoner Cohort, IWS who were treated with medication were no more likely to violently reoffend than individuals without psychotic features. IWS who were noncompliant with their medication were found to be more likely to violently reoffend than criminals without psychotic features. Additionally, even though substance

use is often cited as being associated with violent behaviors, substance abuse treatments did not significantly decrease violent behaviors. Medication adherence played a more important role in reducing the likelihood of violent behaviors than addressing substance abuse. Another important note to make is that among other symptoms of psychosis, persecutory delusions were cited as being the only significant influence for violent behaviors by mediating the effects of medication nonadherence (Keers et al., 2014).

### *Violence in Rural Communities*

IWS are also more likely to be at risk for committing a violent offense when they have limited access to medical services. This is evidenced by the increased association of violence in female offenders who live in a rural area and have lower education. Although it is inconclusive whether living in a rural area or having lower education accounted for the most variability (Wang et al., 2017).

The study was conducted in the Hunan province of China, offenders who are suspected of having psychiatric disorders are required to receive psychiatric assessments. This allowed the authors to collect data that was representative of all female offenders with a diagnosis of schizophrenia. However, the authors did not collect data regarding the number of violent offenses committed by each participant. Another limitation to the study was that the type of violent offenses was not specified in the study (e.g. gun violence or fist fighting). Because the type of violence and the number of violent offenses were not specified, the level of violence risk could not be assessed or accounted for. Another limitation to this study was that it was conducted in the Hunan province, so it might not be representative of all Chinese offenders since the phenomenon observed in the Hunan

province might be affected by cultural factors might not apply to other areas of China (Wang et al., 2017).

### *Effects of Treatment Adherence on Different Kinds of Violence*

In a study conducted by Economou et al. (2005), different types of aggressive and violent behaviors were evaluated among IWS. Among the participants evaluated, the most aggressive behavior, which was identified as shouting, was only reported in one-fifth of cases, while verbal threats, which was the next most reported aggressive behavior, was only reported in one-sixth of cases. Actual physical and sexual aggression was reported by less than 10% of cases. During the course of 4 years of optimal treatment, number of frequent aggressive behaviors had been reduced by a half. Another important finding from this study was that involvement with the criminal justice system had negligible impact on the outcome of treatment. This meant that treatment had a bigger impact on reducing aggressive behaviors than being punished by the legal system. While cooperation with treatment was associated with misconduct at baseline, it did not have a significant effect on misconduct during any other point of treatment. It is important to note that this study was conducted in central Athens, which has low rates of violence among IWS compared to the United States, United Kingdom, and Scandinavia, which may dampen external validity of this study (Economou et al., 2005).

Yee et al. (2011) found that more than half of their participants with psychosis had engaged in assault with a weapon. The participants who committed violent behaviors that did not involve a weapon included punching, kicking, or strangulation. While only a small percentage of participants (2.4%) had never received treatment, there were no

significant differences in the number of assaults between those with a history of treatment and those that were treatment naive. Interestingly, patients who were treated were less likely to have a criminal conviction prior to their assault (63% versus 90%). Among the offenders who were previously treated, only 12% reported taking their antipsychotic medication within the period that preceded that offense. The participants confirmed that they were experiencing psychotic symptoms at the time of the offense, with an overwhelming amount of participants reporting experiences of auditory hallucinations (80%) or delusional beliefs (92%). The delusions that were reported included persecutory, religious, grandiose, and jealousy delusions. Only 34% of the offenders reported that their auditory hallucinations directed their offense. This study indicates that individuals who commit violent offenses are more likely to have been treatment nonadherent. The nonadherence to treatment might help to explain why there was no significant difference in number of assaults between those who were treated and those who were never treated for psychosis. However, the authors did not include comorbid diagnosis information that would be relevant for a forensics population, such as past conduct behavior or the presence of antisocial traits. Therefore, it is unclear whether medication adherence would have reduced the frequency of assaults among these individuals, although treatment adherence would likely have reduced the severity of positive symptoms that IWS were experiencing at the time of the assaults.

### ***Effects of Medication Adherence on Homicidal Behaviors***

Hospitalization significantly reduces the rates of violent behaviors in IWS. After controlling for cultural differences between two different age groups, absence of

hospitalization was still found to increase homicidal behaviors (Erb et al., 2001). Antisocial traits and living in rural areas where medical and psychosocial services are likely very limited, were identified as significant risk factors for IWS who have committed homicide, to recidivate. IWS who lived in a rural area and committed homicide were more likely to recidivate when they returned to their rural communities, where psychiatric resources were limited (Golenkov et al., 2013). While many IWS who have committed homicide have limited access to treatment, it is unclear whether they would have sought out those services if they had access. Data from a study cohort in England and Wales revealed that the behavior of IWS who committed suicide is different from those who committed homicide. IWS who committed suicide were more likely to engage in treatment while IWS who have committed homicide were more likely to have not received services (Baird et al., 2016).

In Western countries, perpetrators of homicide with psychosis were more likely to commit homicide against a family member or friend when they were experiencing delusions and/or hallucinations or when using alcohol or drugs. In this particular study, all 48 homicides in Sweden from 1992-2000, perpetrated by IWS, were studied. A little over half (54%) of the cases had experienced hallucinations or delusions while engaging in their homicidal behaviors. Among the offenders, 79% of offenders had experiences with psychiatric services, but around the time of their homicide, only 33% had continuous services. Less than half (48%) of participants were prescribed antipsychotic drugs, but at the most 2 individuals were taking their medication. Intoxication was only reported in a few of the cases (Nordstrom et al., 2006).

Homicidal risks increase in IWS with comorbid antisocial personality traits, acute

positive symptoms, and who experience persecutory delusions. These individuals have a higher risk of being a danger to themselves and to others (Belli and Ural, 2012). Many of these individuals were undertreated or untreated, lived in urban areas, were more likely to be poorly educated, were more likely to be unemployed, and have less access to services. Offenders were also more likely to commit homicide when they were noncompliant with their medication (Belli and Ural, 2012). Overall, when patients did not utilize medication, whether through noncompliance or through lack of access, homicidal behavior risks increased. Those that did receive service but engaged in homicidal behavior were more likely to be diagnosed with a paranoid subtype, misuse of medication, and exhibit low treatment compliance just prior to the offense (Belli et al., 2010; Karabekiroglu et al., 2015). Another contributing factor to homicidal behavior could also be explained by low family support, which had a significant relationship with homicidal behavior among IWS (Kachouchi et al., 2017). While there is still limited understanding for these relationships, low family support could possibly contribute to self-stigmatizing beliefs. This was also observed in the Xinjin county, which is a rural location in China. Among the IWS, only 10% had committed some kind of criminal activity, however other contributing factors for criminal behavior were: being male, unmarried, homeless, having a history of violent behaviors, lack of family caregivers, and a higher total PANSS score (Ran et al., 2010). Another study confirmed that many patients in rural China do not receive medication and for those who do receive medication, it is usually only for a short period of time (Ran et al., 2001).

In summary, homicidal behaviors were more likely to occur in populations that did not have access to medical services. Access to medication services did not guarantee

better outcomes, since certain IWS still engaged in homicidal behavior. The traits that were observed in these individuals were low treatment compliance as well as paranoia. As mentioned before, persecutory delusions have been associated with the relationship between medical compliance and violent behaviors. It is unclear whether persecutory delusions and paranoia have a causative effect on medical compliance or violent behaviors, but it is likely that their influence into these behaviors complicates treatment in a way that is not seen in patients without psychosis. A study by Meehan et al. (2006) provides details about the relationship between treatment adherence and homicide in IWS. They found that the majority of IWS who had committed homicide (28%) had not received mental health services. IWS who had committed homicide either never receive services (28%) or had received services (21%) but discontinued their treatment. For the offenders (51%) who had received services within the year prior to their offense, they had either adopted a habit of missing appointments (40%) or were noncompliant (39%) with their medication treatment. Many IWS who had committed homicide experienced some sort of delusion during the time of their offense, which may suggest that medication non-adherence contributed to their offense (Meehan et al., 2006).

### ***Violence and Psychosocial Treatment***

While most of the literature focuses on the relationship between medication adherence and violence in IWS, there are some studies that investigate the relationship between psychosocial treatment and violence. Ascher-Syanum et al. (2009) found that IWS who were adherent to medication were also more likely to engage in psychosocial treatments, while IWS who were not adherent to medication were less likely to engage in

psychosocial treatments (Ascher-Svanum et al., 2009). In a study conducted by Jakhar et al. (2015), nonadherence to psychosocial treatments had a strong association with violence risk while nonadherence to medication had a moderate association with risk for violence (Jakhar et al., 2015). This association was confirmed in a meta-analysis, where adherence to psychological therapies was more predictive of violent behaviors than medication adherence, even after controlling for inpatient treatment, involuntary treatment as mandated by the criminal justice system, or the type of medication that was being taken (Witt et al., 2013). While both psychosocial treatment and medication can significantly improve outcomes for IWS, these findings could suggest that the effects of psychosocial treatment have more of a long-term benefit for the patients than medication adherence. For these reasons, psychosocial treatment adherence should also be considered as a possible target to reduce violence in IWS. For instance, cognitive behavioral therapy has been shown to reduce verbal and physical aggression in men with antisocial personality disorder (Davidson, et al., 2009). While there is very limited research on the effects of cognitive behavioral therapy on violent outcomes among IWS, there is promising research that suggests that cognitive behavioral therapy has potential for reducing risk factors for violent behaviors in general.

### ***Criminal Activity and Treatment Adherence***

Overall, adherence to antipsychotic treatment regimens was associated with significantly lower risk for nonviolent and violent offenses compared to those who were non-adherent. It was suggested that partial adherence can still lead to criminal behavior, and that high rates of medication adherence are necessary to maintain a low rate of



criminality. As was mentioned in previous sections, improved neurological and cognitive functioning is necessary for some criminal behavior, so having impaired functioning could ideally lower those behaviors for some individuals (Rezansoff et al., 2017). In the dissertation written by Calhoun (2016) suggested that a pathway exists from medication adherence to criminal recidivism. The author found that IWS who were presenting with psychiatric symptoms were associated with higher rates of criminal recidivism and that psychiatric symptoms were related to medication adherence. Studies suggest that the relationship between the criminal justice system and mental health treatment may be reciprocal. While many studies suggest that medication non-adherence can lead to violent outcomes and criminal behaviors, the opposite may also be true. IWS who interact with the criminal justice system are at risk for worse outcomes. Previous incarceration has been identified as a barrier for mental health treatment engagement, and is also associated with a longer duration of untreated psychosis (reference). Furthermore, one study found that 37% of patients reported being incarcerated while experiencing their first episode of psychotic symptoms. As a result, these patients were delayed in receiving treatment and experienced more severe positive symptoms (Wasser et al., 2017). Overall, individuals with a criminal record have difficulty reentering society for several reasons, such as lack access to public assistance programs, housing restrictions & difficulty obtaining necessary state identification (Wikoff et al., 2012). This proves to be even more difficult for individuals with mental health concerns. These individuals face housing challenges, have difficulty maintaining employment, and may have difficulty accessing mental health care once Medicaid insurance is revoked upon entering the criminal justice system (Solomon, Dedel Johnson, Travis, & McBride, 2004,; Substance Abuse and Mental

Health Services Administration, 1999).

IWS who have a history of criminal behavior, have also been found to be nonadherent towards other mental health treatments that they might have comorbidity with, especially substance use. Among the individuals identified having opioid use disorder, only 8.7% (2 out of 23 individuals) had received opioid use disorder treatment (Kivimies et al., 2018). Furthermore, substance use and treatment nonadherence has been shown to have reciprocal effects on one another. In one study, cannabis use has been found to increase the risk for treatment nonadherence, likely because cannabis use reduces executive functioning and increases impulsivity. Additionally, cannabis can increase the risk factor of violent behaviors in individuals experiencing psychosis (Moulin et al., 2018). In another study, that investigated the effectiveness of opioid treatments that utilize methadone, buprenorphine, and oral naltrexone, they found improved substance abuse outcomes, inpatient mental health treatment, and adherence to serious mental illness medications. Individuals with a dependence with opioids, when compared to individuals without a dependence with opioids, had higher rates of arrest and felonies. However, those who used oral naltrexone had lower rates of arrests and felonies (Robertson et al., 2017). Overall, these studies suggest that substance abuse may moderate violent and criminal behaviors among IWS. Treatment that targets substance use, as opposed to those that target psychosis, have been shown to lower the rates of violent or criminal offenses committed by IWS. This suggests that successful treatment for IWS requires adherence to both psychosis focused treatments and for treatments that focus on their other aspects of their mental health.

### *Positive Symptoms and Violence*

The previous sections provided evidence stigma influences medication adherence and medication adherence influences violent behaviors. This section will explore the relationship between positive symptoms and violence, which will help to explain what happens when these positive symptoms are untreated due to medication nonadherence. As was mentioned before, positive symptoms in psychosis are symptoms that are a result of excess or distortions in functioning. These symptoms can include, but are not limited to: hallucinations, paranoia, thought disorder and delusions.

IWS with a history of violent behavior were found to exhibit greater positive symptom severity than patients who did not exhibit violent behaviors. Patients who did not engage in violent acts were also more likely to have better clinical insight and more self-reflectivity. (Ekinici & Ekinici, 2012). Along with positive symptoms, general psychopathology also increased likelihood for aggressive behaviors (Mittal et al., 2014).

Hodgins (2014) found that the aggressive behavior in untreated schizophrenia patients was often associated with one particular positive symptom, persecutory delusions, which is the false notion that one is being persecuted. Hodgins reported that persecutory delusions mediated the absence of treatment and violent recidivism. Those who experienced paranoia or persecutory delusions tend to view ambiguous, sometimes nonthreatening stimuli as threatening. This abnormal visual processing has led to patterns of reduced re-appraisal of information, which can mean that IWS with persecutory delusions have difficulty becoming conditioned to certain stimuli (Phillips et al., 2000). With respect to treatment, IWS may find it difficult to trust the medication given to them or the treating clinician. Many safety behaviors performed by those with persecutory

delusions is performed with the intention of self-preservation, which is often displayed as avoidant behavior. Safety behaviors can paradoxically increase the risk for violent behaviors, because safety behaviors like avoidance can influence an increase in paranoia or other symptoms that can increase violent behaviors. Part of this is because safety behaviors are maladaptive in nature and are antithetical to therapy, which encourages people to confront fear rather than avoid it (Freeman et al., 2007). Research shows that avoidance can contribute to psychopathology. What safety or avoidant behaviors can do for the individual is give them a temporary escape from whatever it is that is distressing them, but it deprives the individual the chance to undergo exposure, which allows them to not only process their distress, but to work through it as well (Treanor and Barry, 2017). Furthermore, IWS who have a history of violent behaviors were no more likely than IWS, without a history of violence, to engage in aggressive safety behaviors. In summary, persecutory delusions and avoidant safety behaviors were associated with more violent behaviors (Freeman et al., 2007).

After Coid et al. (2016) controlled for demographic and clinical characteristics in their study, it was discovered that paranoid ideation was found to have an association with violence of any kind, which includes: repetitive violence, violence during intoxication, violence resulting in injury to perpetrator or victim, police involvement, and violence against strangers (Dongen et al., 2016). fMRI images show that persecutory delusions were associated with the enhancement of neural processing when presented with threatening stimuli, coupled with decreased processing of safety cues. This may be associated with hypervigilant behaviors among IWS that cause them to restrict social behavior (Perez et al., 2015).

## **CHAPTER FOUR**

### **DISCUSSION**

To date, studies have not explored the relationship between stigma and violence among IWS. However to make this connection, this review explores a common variable that is studied in stigma and violence research, which is medication adherence. Research that focuses on stigma or violence among IWS usually includes the phenomenon in relationship to other variables, like substance use or social economic status, but they have yet to be studied together (Moulin et al., 2017). Support for the associations between nonadherence and stigma has been found in both medication and psychosocial treatments (Wang et al., 2016; Fung et al., 2008). Similar to how there is stigmatization surrounding schizophrenia, there is also a lot of stigmatization surrounding the treatment for schizophrenia. Accepting treatment for schizophrenia, whether that may be psychosocial or medical treatments, can have different implications for someone with schizophrenia. Some data suggests that IWS become nonadherent to treatment because they want to avoid disclosing their condition to people who discover them engaging in treatment (Sajatovic & Jenkins, 2007). For some individuals, accepting treatment would also be equivalent to accepting that they have schizophrenia (Mert et al., 2015). Some individuals with schizophrenia will even stay nonadherent even though they are able to acknowledge the benefits of treatment. Much of these types of treatment non-adherence may be due to social and functional consequences to having schizophrenia. IWS have reported being discriminated at work, being alienated by peers, and even having trouble finding housing due to their condition (Grover et al., 2017).

While it is currently not known how stigma may directly influence violent

behavior, implications from the available literature indicate that stigma may increase violent behavior in IWS through treatment non-adherence. Nonadherence to treatment can put an IWS at risk for committing a wide range of aggressive and violent behaviors. These behaviors vary from shouting or pushing, to severe physical harm like homicide (Economau et al., 2005; Erb et al., 2001). While antisocial and aggressive personality traits are commonly seen in IWS who behave violently, in many cases the IWS have claimed that they experienced psychotic symptoms during the time of their offense (Meehan et al., 2006).

Essentially, treatment adherence is crucial for reducing violent behaviors, and stigma interferes with treatment adherence. While many studies suggest that violence is mainly a result of aggressive personality traits, the studies on violence and positive symptoms suggest that the experience of positive symptoms can increase the risk of violent behaviors (Sedgwick et al., 2017; Phillips et al., 2000). This is not to imply that psychosis will necessarily make anyone violent, but that psychosis can increase the chances of violent behaviors, which means treatment for psychosis is especially important. These findings validate the need to increase treatment adherence in order to reduce violent behaviors. Research is needed to explore the relationship between stigma and violence, so that treatment for schizophrenia can have a greater focus on stigma. It is also important to recognize that both psychosocial and medical related treatments were found to have a positive effect on reducing violent behaviors among IWS. This validates the idea that one type of treatment should not be emphasized over the other, and that both have their place in reducing violence in schizophrenia. Understanding this could lead to more individualized care for IWS. Both psychosocial and medical related treatments are

stigmatizing in their own way. Engaging in psychosocial treatments may require the individuals to take time off of their daily schedule so that they can attend treatment sessions regularly. For example, an IWS who needs to take time off of work may be worried about having to disclose their information to their boss, or having their coworkers finding out. Medical related treatments, like taking medicine, may also lead individuals to be fearful that the people around him will discover the medicine and find out about their diagnosis. Keeping this in mind, practitioners may benefit from having IWS be more involved with their treatment, by allowing them to choose which form of treatment they prefer. This may allow them to pick a treatment that feels the least stigmatizing to them. Additionally, this may help IWS to gain a sense of self efficacy and provide a sense of control over their treatment. However, studies on involving IWS in treatment should be studied and closely monitored.

While this review highlights that an association between stigma and violence may exist, there are some limitations to this review. One limitation is that not all of the studies defined what violence meant. Because there is a wide range of behaviors that are considered violent, this risks the internal validity of this review. An example of this would be that the motivations behind a violent behavior like shouting or pushing may not be equivalent to that of homicide. Future research might benefit from clearly defining what violence means. Another limitation is that the relationship between stigma and violence may only be correlational.

## **CHAPTER FIVE**

### **TREATMENTS**

Currently, further research is needed on the most effective ways to treat self-stigma in individuals with schizophrenia. Ideally, treating self-stigma would improve medication compliance within IWS, and therefore also lower levels of violence in this population. Thus far, the literature shows that previous attempts to reduce stigma have not provided consistent results (Knight et al., 2006). Knight et al. (2006) targeted perceived stigma and self-esteem within a group cognitive behavioral therapy setting that included 21 patients with schizophrenia. They reported significantly improved self-esteem and reduced depression, positive and negative symptoms, and general levels of psychopathology. Lucksted et al. (2011) evaluated “Ending Self-Stigma”, a 9-session group intervention that was designed to reduce internalized stigma in individuals with serious mental illness. The participants, which were recruited from 2 Veterans Administration mental health sites, experienced significantly decreased self-stigma and improved perceived social support and recovery orientation. Fung et al. (2011) utilized a self-stigma reduction program whose aim was to target readiness for change and promotion of adherent behaviors within IWS. The program included 12 group sessions and 4 individual follow-up sessions. The program integrated psychoeducation, cognitive behavioral therapy, motivational interviewing, social skills training, and goal attainment program. The findings showed that the program had promise for increasing self-esteem, promotion of ready for changing problematic behaviors, and enhanced psychosocial treatment adherence. However, Fung et al. (2011) found that the program could not maintain therapeutic effects during a 6-month follow up period.



Goff et al. (2010) designed a program for patients with schizophrenia and schizoaffective disorder, which was intended to help with medication nonadherence. The program was designed to target stigma, impaired insight, and unwanted side effects of antipsychotic medication. The interventions that were included were intended to encourage acceptance of the illness, creating analogies with treatment for chronic medical disease, and involving the patient in the decision making process. The clinicians were encouraged to be nonjudgmental and support patients to disclose problems with adherence. This was validated provided by data from Goff et al. (2010) that suggests that patients are more willing to comply with treatment if they feel as though the benefits outweigh the risk. By allowing a space for patients to be encouraged and supported, it can help reduce the sense of risk they may experience when they seek out treatment.

In a study that explored the association between self-efficacy/empowerment and self-stigmatization, results revealed that for almost half of participants, depression and reduction of quality of life could be explained by a reduction in empowerment. A little over half of the participants who experienced reduced empowerment could explain their experience through their self-efficacy. Those who experienced reduced empowerment and self-efficacy had also experienced higher levels of anticipated stigma (Vauth et al., 2007).

In another study, 70 individuals with schizophrenia, who worked in a vocational rehabilitation program, were assessed on measures of stigma, pathology, and self esteem after 5 months of the baseline assessment. The results revealed that there was a 25% decrease in self-stigma for 38% of the participants. The individuals who experienced reduced self-stigma were more likely to experience less emotional distress both at

baseline and during the 5 month follow-up, and had higher levels of self-esteem during the follow up (Lysaker et al., 2012).

This review concludes that self-stigma leads to treatment non-adherence, which then leads to violent behaviors in IWS. While there are treatments that target self-stigma in IWS, the data on their effectiveness is still inconclusive. There is still limited to no research done on the relationship between stigma and violence. This should be included in future studies.

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