

**A Proposed Analysis of the Prevalence Rates of Comorbidity Between
Schizophrenia and Individual Personality Disorder Clusters**

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Abstract

This study seeks to identify the comorbidities between schizophrenia and personality disorders in order to discover which DSM-5 cluster is most prevalent in those with schizophrenia. Cluster A (odd, eccentric thinking and/or behavior), cluster B (dramatic, unpredictable thinking and/or behavior), and cluster C (anxious, fearful thinking and/or behavior) are the three personality disorder clusters specified by the DSM-5. Two designs are presented, with the non-experimental being more appropriate. An experimental approach to the research question entails the random assignment of situations that warrant a reaction from those participating in the study. A non-experimental approach to the research question entails an exploratory case study in which multiple mediums of data are collected. Both designs establish a relationship between schizophrenia and personality disorders, as well as exhibit which personality disorder is most prevalent. This research allows experts in many fields to better understand schizophrenia and subsequently develop accurate treatments.

Keywords: schizophrenia, personality disorder, cluster A, cluster B, and cluster C

Introduction

Schizophrenia is a serious mental illness that has yet to be fully understood. While many researchers have pinpointed an array of symptoms and patterns associated with the disorder, deemed “neurological abnormalities,” the cause of schizophrenia remains a conjecture (Bansal & Gupta, 2021). Due to this lack of knowledge, treatments specific to schizophrenia only manage associated symptoms and are unable to target the real cause of the disorder. Furthermore, most available medications cause severe

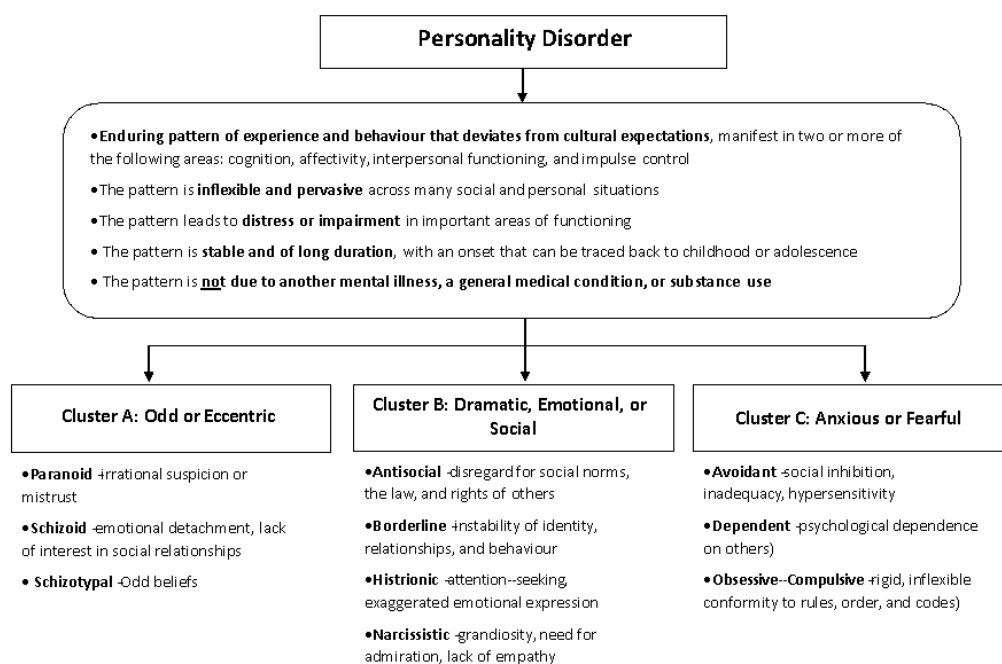
side effects that lead to the patient not following through on their treatment, thus, treatment is halted, and episodes ensue, leading to cycles of hospitalizations and a reduced quality of life (Velligan et al., 2017). Our research seeks to end these cycles by identifying which cluster of personality disorders, described in *Figure 1*, specified by the Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition (DSM-5) is the most prevalent in those with schizophrenia. Determining which personality disorder cluster is the most prevalent in those with schizophrenia will allow experts in multiple fields to develop new treatments and improve upon existing treatments, as well as move closer to definitively identifying the underlying causes of schizophrenia, so that those living with the mental illness can have a better quality of life.

The complicated nature of schizophrenia is responsible in part for the lack of literature surrounding the mental illness (Al Qassar, 2014). This lack of knowledge hinders experts' ability to properly produce effective treatments. Identifying the comorbidities that exist between schizophrenia and personality disorders, as well as pinpointing which personality cluster is the most prevalent in those with schizophrenia, is important for better understanding this mental illness (Dellazizzo et al., 2018). Therefore, the question this proposed analysis seeks to answer is which cluster of personality disorders is most prevalent in those with schizophrenia. While this information does not directly answer what causes schizophrenia or what improvements need to be made in treatments, it still provides invaluable information regarding the many connections between the biological and social workings of the condition and other personality disorders that can lead to identifying its underlying causes, developing novel drugs, and improving existing treatments (Keshavan et al., 2020).

Carrying out an exploratory case study in order to observe the prevalence of personality disorder clusters in those with schizophrenia would allow us to obtain invaluable information pertaining to one of the least understood mental illnesses. The present broad definition of schizophrenia means aspects of many fields must be incorporated into developing treatments for such a unique illness (Guloksuz & Van Oz, 2018). Therefore, the data for this study will be applicable to the fields of psychology, psychiatry, sociology, and pharmacology. This research study provides an opportunity to shed light upon and improve an area of science that has seemingly been overlooked.

Figure 1

Description of the three personality disorder clusters specified by the DSM-5 (Black & Andreasen, 2011).



Relevant Literature

Schizophrenia and Personality Disorders

While plenty of literature regarding comorbidities among personality disorders and schizophrenia exists (Jerrell et al., 2017; Moore et al., 2012; Wickett et al., 2006), no published work definitively states which cluster of personality disorders is the most prevalent. Current research on schizophrenia revealed a strong comorbidity rate between it and other psychiatric conditions and cognitive disabilities (Jerrell et al., 2017). For instance, a study found that those with schizophrenia exhibit more neurological abnormalities in their motor and sensory neurons, which suggests a connection between the presence of personality disorders and schizophrenia (Bansal & Gupta, 2021). Similar research found that those with schizophrenia or schizoaffective disorder are more likely to screen positive for a personality disorder (Moore et al., 2012). Furthermore, the results of a multiple regression analysis of cluster B and C traits found a significantly positive correlation between emotional discomfort symptoms and borderline traits, establishing a relationship between higher levels of positive symptoms, more avoidant traits, and less dependent traits (Wickett et al., 2006).

Evidence Suggesting Cluster B is More Prevalent in Schizophrenia Patients

While little research has been conducted specifically concerning the comorbidities of personality disorders and schizophrenia, information obtained from those that have been carried out suggest that personality disorders within cluster B are the most prevalent (Goldschmidt et al., 2014; Martinez et al., 2020; Lysaker et al., 2004; Shultz & Hong, 2017). One specific experiment observed that the more symptoms of a

personality disorder a schizophrenia patient has, specifically in antisocial or cluster B personality disorders, the more likely they are to exhibit violent or aggressive behaviors, arguing for more comprehensive schizophrenia assessments to include personality disorder tests (Bo et al., 2013). Another example can be found in an experiment that determined that the delusional thoughts had by those with schizophrenia and those with dissociative identity disorder (a cluster B personality disorder) vary in the degree of delusional content but both believe in their delusions to the same level (Martinez et al., 2020). These studies build on existing evidence that suggests that schizophrenia and personality disorders display comorbid traits, and that cluster B personality disorders are the most prevalent.

Evidence Suggesting Cluster A or C is More Prevalent in Schizophrenia Patients

However, other examination of the comorbidity between schizophrenia and personality disorder revealed research that supports the presence of clusters A and C more so than cluster B (Kemp et al., 2020; Wei et al., 2016). A study conducted in China revealed over 80% comorbidity between schizophrenia and personality disorders, with cluster A being the most prevalent, followed by cluster C, and then cluster B (Wei et al., 2016). Even though this study cannot be generalized to the United States, it still presents sufficient evidence that counteracts prior knowledge that proposes that cluster B is the most prevalent (Wei et al., 2016). Additionally, another study that tested schizophrenia patients along the Multidimensional Schizotypal Scale - Brief (MSS-B) revealed that those who received high scores on the positive and negative subscales of the assessment displayed schizotypal personality disorders, which predicted the prevalence of cluster A personality traits (Kemp et al., 2020). Due to the conflicting

evidence from multiple studies that were not necessarily focused on cluster prevalence as it relates to schizophrenia, the present analysis would allow there to be more definitive conclusions on the subject.

Distinguishing Between Disorders

In addition to comorbidities, it is vital to consider the similar symptomology between the disorders, distinguishing among schizophrenia, personality disorders, and other psychiatric disorders so that there is no confusion leading to improper treatment (Dellazizzo et al., 2018; Jerrel et al., 2017; Simonsen & Newton-Howes, 2018). With schizophrenia in particular having such broad diagnostic criteria, it is commonly comorbid with other psychiatric disorders. However, if these other disorders, such as anxiety, depression, personality disorders, or addiction disorders, are not discovered it can lead to detriments in treatment (Dellazizzo et al., 2018; Tsai & Rosenheck, 2013). Substance use disorders especially are common in those with personality disorders, and research found that those diagnosed with a substance use disorder and a cluster C personality disorder were more likely to be anxious and depressed than those with other cluster disorders (Roncero et al., 2018). Other confounding variables are often present in those with personality disorders, such as cluster B personality traits being correlated with impairments in neurocognition (Lysaker et al., 2004). There is a substantial body of research that stresses the importance of distinguishing between disorders and considering confounding variables so that those with schizophrenia can receive the best treatment possible.

Research Limitations and Ethical Considerations

Further collection of related research revealed several limitations and ethical considerations relevant to the proposed study. As schizophrenia and personality disorder research advances, diagnostic criteria constantly evolve to keep up with the scope of newly associated symptoms, extrinsic factors, and comorbidities (Keshavan et al., 2020). Increasingly, researchers and psychiatrists are adopting the notion that the concept of schizophrenia itself is poorly defined and outdated, arguing that countless examples of frequent misdiagnosis and inaccurate treatment demonstrate that the schizophrenia diagnosis should be eliminated altogether (Guloksuz & Van Oz, 2018).

Other research sharing similar positions point out the limitations of using only symptoms as a diagnostic tool, a prime example of which is the symptomatic commonality between schizophrenia and borderline personality disorder (BPD), a DSM-5 cluster B disorder. Both conditions exhibit the same levels of distress tolerance and are often mistaken for one another (Bonfils & Lysaker, 2020). Schizophrenia and BPD also share similar delusions and irregular social habits, emphasizing the need for clear diagnostic criteria (Shultz & Hong, 2017). Evidence of DSM cluster A overlap and inconsistency also call for a more comprehensive diagnostic model for personality disorders (Tackett et al., 2008).

Regardless of the study's methods, treating research participants with fairness and respect requires a proper analysis of ethics. In the United States specifically, all research participants with psychiatric disorders are required special protections in order to reduce vulnerability due to diminished decisional capacity, and while blanket

statements without considerations for the individual would be easier to implement, they have the potential to limit autonomy and unnecessarily impact the authenticity of research (Bracken-Roche et al., 2016).

Possible Research Designs

Possible research designs for the study include experimental and non-experimental research designs. Both research designs will allow for addressing of the research question concerning the comorbidities between schizophrenia and clusters of personality disorders. Furthermore, both research designs allow for the examination of those who are 18 years or older living in the United States with schizophrenia to analyze differences in comorbidity frequency among personality disorder clusters. An experimental research design is defined as “a study in which an intervention is deliberately introduced to observe its effects” and, ultimately, establish a scientifically tested hypothesis (Mitchell, 2015, pg. 2). In contrast, a non-experimental research design is defined as a study that focuses on “contextual, cultural, and societal factors” (Swart et al., 2019), but “lacks the manipulation of an independent variable, random assignment of participants to conditions or orders of conditions, or both”, which is an essential part of a true experiment (Price et al, 2015).

A potential experimental design that would address the research question would be a randomized experiment utilizing random assignment of the intervention to those participating in the study to show a relationship between two variables: the presence of schizophrenia and the presence of personality disorders. Assigning participants at random to either the treatment or control group, once they have been deemed eligible to

participate in this study, would allow the results of this experiment to be attributed to only the measured independent variable, as any differences observed in the findings would be due to chance. The intervention specific to this experiment would be placing the participants in the treatment group into certain situations that would warrant a reaction that could be observed and recorded and used to generate data. The control group would then be observed and recorded to generate data that would be used to analyze the effects of the intervention. This would be a deductive experiment, and therefore quantitative, as it is starting with a general theory and moving towards a specific conclusion. If this experiment was performed, the results would suggest the percentage of individuals that have schizophrenia and a personality disorder through the use of nominal level measurements and descriptive statistics (Jung, 2019). More specifically, they would be broken down to indicate which personality disorder cluster, cluster A (odd, eccentric), cluster B (emotional, erratic), cluster C (anxious, fearful), is most frequently associated with schizophrenia.

A potential non-experimental design that would address the research question would be an explorative case study. Carrying out a case study allows for multiple mediums of data collection, proving to be the stronger method pertaining to the research question. Case studies are in-depth studies carried out in a “real life, contemporary context or setting” to observe a specific community and gather various sources of data (Creswell, 2018, p. 96). The focus of the case would be the schizophrenic population in the United States and the unit of analysis would be individuals. The various sources of information that would contribute to answering the research question would be observations of those with schizophrenia, interviews of

those with schizophrenia, as well as with experts in the field of mental illness, surveys of those with schizophrenia, and existing data from other studies.

A non-experimental research design is a more appropriate way to assess the study participants because it does not require the manipulation of their personal lives or exploitation of their symptoms. Instead, it allows for a detailed account of their experiences that can be compared over the group, since non-experimental research designs allow studies to focus on contextual, cultural, and societal factors (Swart et al., 2019). Therefore, a non-experimental approach would be the more ethical choice in comparison to an experimental research design, as putting participants in a situation that would essentially trigger their conditions is something that is strongly advised against. After much deliberation as to whether a qualitative or quantitative approach would be more conducive to this non-experimental research, that is if it would be more effective to compare testimonials or surveys from participants about symptoms and severity, a mixed-methods approach was decided upon. Carrying out a case study would be the most practical way to conduct the necessary research as it would allow the analysis to continue with a mixed-methods approach and gather data from multiple sources producing both quantitative and qualitative findings. Because a mixed-method approach involves conducting research that integrates quantitative (e.g., experiments, surveys) and qualitative (e.g., focus groups, interviews) research to create “an approach to knowledge that attempts to consider multiple viewpoints, perspectives, positions, and standpoints,” this would be the best approach for understanding the symptoms of the participants on a deep level while still being able to produce generalizable results (Johnson et al., 2007, pg. 113).

Next Steps and Future Directions

To develop this research, it would be necessary to partner with doctors, hospitals, or clinics that treat schizophrenia patients. This allows for access to the participants of interest so that their informed consent may be obtained and observation and interviews may be carried out. Additional steps would include producing and administering a survey to participants; however, it would be best to take a class on survey construction to properly understand how to do this. Once additional data is collected, statistical analysis would be performed on collected data in order to determine what is statistically significant. Furthermore, bringing in a psychology or statistics expert to help interpret the data would be beneficial in achieving an accurate conclusion to this study.

Further expansion of this research project could entail conducting an analysis of how its findings affect diagnosis consistency and/or health outcomes. This would require accessing medical claims data. Additionally, research participant background information might be collected to determine potential contributing factors to schizophrenia/personality disorder diagnosis such as childhood abuse, substance abuse, genetic factors, etc. Moreover, the same procedures of this case study could be applied to a different population of adults with schizophrenia. In this case, the researchers would need to be familiar with the different research standards, cultures, and conditions of the new country or region of interest.

Another important next step would be to perform the same procedures with different diagnostic criteria. Implementing the International Classification of Diseases:

Eleventh Edition (ICD-11) criteria would provide an interesting comparison to the DSM-5. To do this, data collection techniques, such as association rule mining (ARM), would need to be utilized to make scaling through large databases and determining similarities within different medical conditions more comprehensible (Wang et al. 2019).

Finally, another next step could be to look into other similar studies that examine the comorbidities between multiple psychiatric disorders and/or other mental disorders. For example, further investigating findings that suggest different prevalence rates for different subgroups through researching the comorbidity between psychiatric disorders and different subgroups of attention/deficit hyperactivity disorder (ADHD), could be worth looking into to examine specific clusters of personality disorders rather than them as a whole (Ohnishi et al., 2019). Another similar study that might merit further investigation, is whether or not cannabis use has any effect on those with personality disorders as far as making them more likely to develop a psychiatric disorder in the future (Shalit et al. 2019).

Conclusion

This analysis of comorbidity between schizophrenia and DSM-5 personality disorder clusters will utilize a non-experimental design. The mixed-method approach will incorporate qualitative data from research participant and psychiatric professional interviews as well as quantitative data from surveys and existing medical information. This will allow a comprehensive review of the symptoms and experiences of adults with schizophrenia in the United States. Though several studies have addressed personality disorder/schizophrenia comorbidity, there are conflicting results regarding the most

frequently concurrent personality disorder cluster. This study seeks a definitive and generalizable answer that sheds light on the prevalence of each DSM-5 cluster. Due to the heterogeneity of schizophrenia, diagnosis is complex and often inconsistent. Through the identification of common comorbidities, medical professionals may be better equipped to recognize, diagnose, and treat schizophrenia and its co-occurring personality disorders. More personalized methods of treatment could revolutionize schizophrenic patient care and lead to better health outcomes.

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