The Relationship Between Mental Illnesses and Aggressive Behavior

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Abstract. As criminal behaviors and crime rates continue to rise, the sphere of influence wielded by criminals also expands. This surge in criminal activity not only inflicts enduring harm upon the victims and the families of offenders but also triggers a pervasive questioning of public security regulations within society. Consequently, the imperative study of the underlying factors contributing to criminal behavior has become both crucial and indispensable. Taking a broad perspective, it is evident that individuals, families, and society as a whole play significant roles in shaping the root causes of criminality. In this study, special attention is drawn to the profound impact of mental illness on criminal behavior. This study aims to synthesize existing research, focusing on the influence of three relatively common mental illnesses—schizophrenia, borderline personality disorder, and antisocial personality disorder—on criminal behaviors. In this study, we will try to decelop in-depth knowledge of intricate between mental illness and criminality. Through this study, we seek to gain a deeper understanding of the intricate interplay between mental health and criminality.

Keywords: Criminals, violent behavior, aggressive behavior, schizophrenia, borderline personality disorder, antisocial personality disorder.

1. Introduction

With the global population on the rise and technology advancing at an unprecedented pace, the topic of "crime" has captured widespread attention. It has manifested itself in various forms such as crime suspense in movies, the intrigue of crime novels, and the enduring fascination with famous unsolved cases. Additionally, real-time crime events also dominate conversations. According to data from the World Bank, the murder rate has steadily increased from 2019 to 2023. It is plausible to infer that the aftermath of the COVID-19 pandemic has contributed to this surge in crime rates. Several factors, including economic downturns and societal pressures, can be held accountable for this phenomenon. Amid these factors, the enigmatic relationship between psychosis and criminal behavior has become an engaging subject for public discourse. In popular culture, numerous films, TV shows, and novels have depicted offenders grappling with mental illnesses such as schizophrenia, dissociative identity disorder, and antisocial personality disorder. Interestingly, lesser-known in reality is the prevalence of borderline personality disorder among criminals.

Previous research endeavors have diligently examined the influence of various mental illnesses on violent behavior and criminal incidents. This study aims to consolidate these findings, specifically focusing on the impact of schizophrenia, borderline personality disorder, and antisocial personality disorder on aggressive behavior. Furthermore, it will dissect the nuanced distinctions in their effects.

It is worth noting that while discussing "criminal acts" in this paper, we will encompass verified cases involving individuals who have engaged in immoral, illegal, or irrational behaviors, considering that the mental health status of the involved parties in some instances may not have been accurately documented or proven.

2. The associations mental illnesses and aggressive behavior

2.1. Schizophrenia

Schizophrenia can be one factor contributing to criminal behavior. It is a chronic condition with an unclear etiology that often manifests during adolescence. Clinical symptoms vary but typically

involve disturbances in perception, emotions, behavior, and other mental activities. Cognitive function is often impaired in schizophrenia, and the condition tends to recur, worsen, or improve with medication and psychotherapy. Common medications for schizophrenia include Lanzapine, Risperidone, and Clozapine.

From the existing data and related papers, it can be inferred that the influences of schizophrenia can be departed to three parts: 1. Some scholars suggest that the aggressive behavior of patients is caused by the positive symptoms of the substance abuse. 2. About the field of gene, it can be affirmed that there has relationship between gene and patients' aggressive behavior, but due to the limitation of the study's sample and the complicated gene interaction, the concrete gene type is not sure. 3. Many scholars agree that the abnormal of frontal lobe and the temporal lobe of the schizophrenia patients causes the aggressive behavior[1].

In the existing research, the relative consistent conclusion is that the hippocampus and frontal lobes (particularly the orbitofrontal lobe and anterior cingulate cortex) reduce in volume during the disease process of schizophrenia patients who have aggresive behavior records[2]. From some classical cases, such as Phineas Gage, the area of his left cheek to his brain was penetrated by a steel bar in an accident, after that his personality completely changed and he became a violent and irritable person; another well-known case is Michael, whose personality completely changed after his orbitofrontal cortex had a tumor: he began to be aggressive towards his wife and daughter, and he even sexually assaulted his daughter and other people in public places and took pornography to his school. After the tumor was removed through surgery, his behavior returned to normal. But later, as his tumor recurred, his abnormal behavior reappeared. After a second time surgery, he eventually recovered. An important study was presented by Brower and Price in 2001. They compared the brains of two murderers through PET scans: one is predatory, organized hostility, and the other is an unstructured, emotional attack. They found that the murderer who was affectively killing people had a weaker prefrontal lobe function and a smaller prefrontal/ subcortical ratio in the right hemisphere. This three parts play main roles in being a person[2]. The frontal lobe has o deal with many basic range of functions, including but not limited to social reasoning, morality, affectivity, personality, self-awareness, executive function, and other cognitive processes; the orbitofrontal cortex accomodates the selection of an appropriate outcomes to specific scenarios; and the dorsolateral prefrontal cortex surveys and settles conflicts. Any danage to these structures can bring on impaired decisions, leading to frustration and resulting aggression.

2.2. Borderline personality disorder

Borderline Personality Disorder is a complex mental health problem that has the features of emotional instability, relationships anxiety, and so on. Individuals who has borderline personality disorder often experience a range of challenging symptoms, including severe depression, anxiety, tendencies toward psychosis, and paranoid thoughts. This condition typically emerges during late childhood or adolescence, with a higher prevalence among females. In a comprehensive review by Papazian, who examined records of more than 160 serial killers spanning the past century, it was observed that serial killers tend to exhibit distinct subtypes, including antisocial, schizophrenic, and borderline personality disorder traits. Ansevics and Doweiko, in their analysis of 11 serial killers, noted a common thread of significant childhood disruptions and upbringing in violent family environments. Consequently, they proposed that serial killers can be considered a specific subtype within the spectrum of borderline personality disorder [3].

Research has further indicated that individuals with borderline personality disorder struggle with processing emotional information, regardless of whether it is negative or positive in nature. This difficulty in emotional regulation has some accociation with structural abnormalities in the prefrontal and temporal lobes of the brain, which may contribute to heightened levels of aggression among those with BPD.

Overall, understanding and addressing borderline personality disorder is crucial, not only for the individuals affected but also for society as a whole, as it can have profound implications for emotional well-being, interpersonal relationships, and even broader societal safety [4].

What is more special is that some scholars have mentioned in previous literature that the hippocampus of patients with borderline personality will decrease significantly with the disease, while the volume of the hippocampus in the left hemisphere is negatively correlated with aggressive behavior, that is, the reduction of the hippocampus will increase the risk of aggressive behavior in patients[5]. And there are also studies that suggest serotonin system disorders in patients with borderline personality disorder[6]. Serotonin, or serotonin, interacts with dopamine. Serotonin is an inhibitory neurotransmitter that helps regulate functions such as mood, sleep, appetite, libido involved in regulating functions such as movement, mood, reward, and learning. If the serotonin system get turbulence, it will influence the dopamine system, eventually it will influence human wrong decisions making[6].

What idiosyncratic is, borderline personality disorder has traits include emotional instability, hypersensitivity to interpersonal relationship, and a tendency to feel strong shame. These traits do not overlap with antisocial personality disorder. Researchers have stated that female borderline personality disorder patients usually have higher activation of their left cerebral cortex when facing social rejection, similar to brain activity that happen when experiencing hostility; some scholars have states (Sadikaj, Moskowitz, Russell, Zuroff, & Paris, 2013) that when BPD patients face the apartness of others, they will erupt in greater quarrels, which means that they will likely to be more extreme when they face the situation of relationship broken. A relatively unified statement is that patients with BPD face far more intense shame than ordinary people, so they will try to eliminate or transfer the shame through externalized attacks[7].

2.3. Antisocial personality disorder

The patients who have antisocial personality disorder may show abuse on others, and they will not regard it; this disorder usually begin in early childhood or adolescence and continue into adulthood. Patients are usually easily irritated, impulsive and reckless, often deceive others for their own interests or pleasure, and often engage in behaviors that do not comply with social norms and morality, such as theft, harassment, and so on. Aggressive and impulsive behavior in antisocial personality disorder differs from the broad definition: generalized impulsive behavior is often defined as the beginning of the action which people start to lose control of mind and behavior, while impulsive and aggressive behavior in antisocial personality disorder is defined as the behavioral intent to hurt others [8].

Like the patients who has schizophrenia and borderline personality disorder, the reason why these people are easily to be irritate has the same cover: they have an abnormal frontal lobe. It had been found that the gray matter's volume in the prefrontal region of the brain in antisocial patients reduces (gray matter is the site of a large number of neurons in the central nervous system)[9].

At the same time, studies have found that people with antisocial personality disorder have difficulty integrating self-defining memories. In the study, patients with antisocial personality disorder were asked to extract 5 things in their lives which can define themselves. These things must have the ability to arouse their emotions strongly, and the subjects mush be familiar with the memory. The problem of have difficulty to organize the self-defining memories of antisocial persons may affect the ability to construct patients themselves by integrating past events, distinguishing between right and wrong, and perceiving self-efficiency[10].

Compared with ordinary population, people with antisocial personality disorder have lower IQ, executive ability and memory, and always have difficulty to recognize human facial emotions. In the field of physiopathology, Raine and other researchers found that the right uncinated fasciculus reduces in patients with antisocial personality disorder. Right uncinated fasciculus plays an important role in dealing with emotional empathy, and if this part suffered from lesion or reduce, the patients' empathy ability may be missing [11]. Blair and his collaborators in 1997, and Baron-Cohen and Wheelwright in 2004, pointed out that offenders can understand and predict how victims will feel and

act in a particular environment, but the criminals themselves act is without any emotion. This is one of the reasons why a lack of empathy can indeed lead to criminal behavior—they fail to understand their behavior, such as unethical and illegal actions, will negatively affect others.

3. Conclusion

This study primarily focuses on summarizing the influence of schizophrenia, borderline personality disorder, and antisocial personality disorder on criminal behaviors. Interestingly, the prefrontal lobe of the human brain plays a pivotal role in all three of these conditions. This is because the prefrontal lobe is responsible for aspects of personal personality and social reasoning. A common thread among patients with these three disorders is their difficulty in distinguishing between their own emotions and those of others, coupled with an inability to empathize with others. It's noteworthy that there exists a medication, clozapine, which has the potential to treat both antisocial personality disorder and schizophrenia simultaneously. The co-occurrence of these two disorders is not uncommon, suggesting underlying similarities between them. It is plausible that genes and other factors may contribute to the concurrent onset of these conditions. Another shared characteristic between individuals with schizophrenia and those with antisocial personality disorder is their struggle to analyze right and wrong through the examination and integration of past events. However, it's important to recognize that borderline personality disorder presents a unique feature in the form of intense shame experienced by those affected. This particular aspect influences the direction in which this disorder drives patients to engage in distinct behaviors. In conclusion, this study sheds light on the intricate interplay between these mental health conditions and their impact on criminal behaviors. Understanding these connections is vital for both clinical intervention and a deeper comprehension of the complexities surrounding these disorders.

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