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Preventing Anger and Aggressive Behavior in Schizophrenia



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ABSTRACT

Background: Patients with schizophrenia experience an increased level of anger and aggression, especially during the acute phase. Some patients respond differently to treatment; therefore, professionals need to find the best course of treatment for each patient. The purpose of this literature review was to determine interventions for preventing anger and aggressive behavior in patients with schizophrenia.

Method: A systematic review was conducted to compare treatments of anger and aggressive behavior in patients with schizophrenia. **Findings:** Medications and cognitive-behavioral therapies were examined to find out if there was a reduction in anger and aggressive behaviors. Antipsychotics are widely used to decrease acts of aggression and violence. In addition to other medications, clozapine, a second-generation antipsychotic, has been shown to reduce aggression and violence. **Conclusion:** Research on cognitive behavioral therapy has shown that patients have improved outcomes after treatment. Medications are promising. More studies are needed to determine the types of therapy to be used and the length of treatment recommended.

INTRODUCTION

Schizophrenia can disrupt many areas of life for those who are affected. This disorder is marked by episodes of psychosis and stabilization. Psychosis is defined as altered thinking, perception, and ability to determine what is real [1]. These episodes of psychosis elicit feelings of anger and aggression, putting individuals at risk for physical violence. Individuals with schizophrenia have a difficult time functioning in the community. When they are experiencing things such as hallucinations or delusions, they can become aggressive towards themselves and/or others. This makes it difficult to function in society [1]. According to the National Alliance of Mental Illness (NAMI), Schizophrenia affects a person's ability to think clearly and function. Hallucinations and delusions may be threatening and initiate aggressive behavior [2]. The purpose of this literature review was to determine interventions for preventing anger and aggressive behavior in patients with schizophrenia, thus improving their functioning in society.

Background

Schizophrenia dates back many centuries with the first noted description of a "schizophrenia-like" illness, going back to 1550 BC in Egypt [3]. A description of "madness" that involved hearing voices, seeing visions, and erratic, unruly behaviors were starting to appear in the literature around the 17th century in the United Kingdom [3]. Schizophrenia was first brought to light in the 19th century by Krapelin [3]. The original term for schizophrenia was Dementia Praecox or "premature dementia," the reasoning for this is the belief that it was a progressive diagnosis and if there were a treatment there would only be partial improvement [3]. Krapelin's work was the pioneering work in differentiating schizophrenia from other psychological disorders. Later, Bleuler began developing the ideas of Krapelin. Bleuler's ideals included the disease to be composed of several vital forces, rather than a single state [4]. The term "schizophrenia" was coined by Bleuler, derived from the Greek words "spilt" and "mind" [4]. He referred to this spilt as a spilt of psychic functions, not spilt of personality. Schizophrenia is now defined as a "serious mental illness that interferes with a person's ability to think, manage emotions, make decisions and relate to others" [2].

Neurotransmitter, anatomic, and immune system abnormalities are all present within patients with schizophrenia [3]. Anatomic abnormalities in the brain are visible through imaging technologies, like magnetic resonance imaging (MRI). Imaging studies show enlarged

ventricles, decreased brain volume and changes in the hippocampus [3]. These structural deformations disrupt communication within the brain [1]. Neurotransmitter abnormalities show schizophrenia is unbalanced levels of dopamine and serotonin in the brain. Dopamine levels are increased in schizophrenia. Immune dysfunctions are prevalent within this diagnosis as well. These patients show increased levels of proinflammatory cytokines and subsequent alteration of brain structure [3]. This results in the creation of kynurenic and quinolinic acid, which are acids that help regulate N-methyl-D-aspartate (NMDA) receptors and are involved in dopamine regulation, hence a possible cause of increased dopamine levels [3]. There are also genetic connections to schizophrenia. Schizophrenia-spectrum disorders are inherited, about 80% of the risk of this diagnosis comes from genetic and epigenetic factors [1]. There are multiple genes and different chromosomal interactions in complex ways to create vulnerability for schizophrenia [1].

Symptoms of schizophrenia have been divided into 4 categories: positive, negative, cognitive and affective symptoms. Positive being where abnormal thoughts and behaviors are present. Positive symptoms are auditory hallucinations, command hallucinations (see Figure 1), delusions, associative looseness and circumstantiality [1]. Negative symptoms are uncommunicative, or withdrawn behaviors feels guilty due to “bad thoughts,” and anergia [1]. Cognitive symptoms present as inattention, impaired memory, poor problem-solving skills and decision-making skills, illogical thinking, and impaired judgment. The last category is affective symptoms, these are dysphoria, suicidality, and hopelessness. All symptoms play into the patient’s ability to function daily. Schizophrenia is an evolving mental illness. Persons with this diagnosis go through phases throughout their lifetime, which is prodromal, acute, stabilization, and maintenance [1]. Each phase has different symptoms, effects, behaviors and thought processes that are prevalent.



Figure No. 1. Command hallucinations are voices directing the person to take an action.

This review focusses on the acute phase. During this phase, patients experience positive symptoms, such as delusions and auditory or visual hallucinations, negative symptoms of poor decision making, and coping skills. Patients also struggle with impaired executive functioning and depression [1]. They can vary from mild to disabling. As the symptoms begin to worsen, the coping of the patient also begins to deteriorate. The increased positive symptoms are the causation of anger and aggression of patients. Their delusions and hallucinations start to overtake their thinking and functioning. When patients start to be aggressive and become a threat to themselves and others, treatment is needed. At this point within the disease process, the patient will be in an inpatient care setting, where the main goal is patient safety and stabilization. Many patients with schizophrenia are not violent, but there is a small population of patients who experience these behaviors [5]. Patients with schizophrenia have an increased risk of violence, this includes risks of dangerous and aggressive behavior. With these risks, and lack of attention to their thought processes usually lead to admissions in locked inpatient care settings. With these care settings, aggression is against staff and other patients within the psychiatric unit [6].

Case Study

Many patients experience fluctuations within the progress of schizophrenia. A conversation with an individual with a diagnosis of schizophrenia is described here. The patient was an older male who had been living with his diagnosis of schizophrenia for years. He had been hearing voices telling him to make a scene in public. The police were called to defuse the situation with the patient. The patient then assaulted the responding officer and was placed under arrest. When the patient was brought in front of the judge, the diagnosis of schizophrenia was brought to attention and he was remanded to care of a psychiatric facility opposed to jail. This was decided as an effort to help the patient learn positive therapies to help control the symptoms and allow him to function within society. Some symptoms this patient displayed were illusions, tangentiality, magical thinking, and flight of ideas. He mentioned he had a girlfriend and they have a love that is on a “telepathic level,” in which they can feel each other through their minds. He talked about how he prayed and talked to God daily. He stated that he had experienced God in front of him during a conversation when he was down one day. These types of ideas are common in schizophrenia as a person struggles to grasp reality.

METHOD

A systematic review of the literature was conducted on treatments of anger and aggressive behavior in patients with schizophrenia. The library, ProQuest, Psychiatry Online, Psychology Journals, and Clinical Key were used to gather information. The studies were found by using the keywords anger, schizophrenia, aggressive behavior, cognitive behavioral therapy, and antipsychotics. Articles examined were dated from 2017 to 2020. The information gathered to answer the research question was related to the prevalence and cause of anger and aggression in schizophrenia. Treatment modalities such as antipsychotic medications and cognitive behavioral therapy (CBT) were explored as well. Getting patients with schizophrenia into the community is a major goal of this observation and decreasing anger and aggression plays a role in that.

LITERATURE REVIEW

The purpose of conducting this literature review was to determine the best therapies for decreasing the prevalence of anger and aggression in people with schizophrenia. To have effective therapies, the factors that cause these emotions must be identified. Decreasing anger

and aggression in schizophrenia will in turn decrease violence and promote functioning in the community.

Classes of Antipsychotic Medications

Mostly all the research found about medications used to treat patients with schizophrenia focus on antipsychotic medications. Antipsychotic medications are the first-line therapy in preventing psychotic episodes and positive/negative symptoms in schizophrenia compared to placebo [7]. There are about twenty approved drugs on the market that fall into different categories of antipsychotics [8]. Antipsychotics can be classified as first-generation, second-generation, and third-generation [1]. First-generation is known as “older” drugs and act on dopamine in the brain. The downfall of this therapy, as well as other antipsychotics, is the development of serious side effects. Some common first-generation drugs are haloperidol and fluphenazine decanoate. These can be given orally or through long term IM injections [1]. Second-generation antipsychotics are newer therapies for schizophrenia and are now defined as first-line therapy. They act on dopamine and serotonin in the brain and produce fewer side effects than first generations. They also decrease negative symptoms while older medications only influence positive symptoms. Second-generation medications are seen to improve social functioning more than first-generation [8]. Some examples of these medications are clozapine, risperidone, and olanzapine [1]. The prevalence of third-generation antipsychotics is also emerging more in the treatment of schizophrenia. Three medications approved in this category are aripiprazole, brexpiprazole and cariprazine and act as dopamine stabilizers [1].

General Antipsychotic Use

The use of medications in decreasing the prevalence of psychosis, in turn, decreases aggression and violence. General use of antipsychotic medications, regardless of what specific medication, is shown to improve outcomes for people suffering from schizophrenia. Leucht et al. [9] examined multiple studies that aimed to determine the effects of antipsychotic drugs in acute exacerbations of schizophrenia. All approved antipsychotic medications were given orally besides clozapine, which was excluded from the study. Symptoms were measured using the positive and negative syndrome scale (PANSS) and the brief psychiatric rating scale (BPRS). The results of this study show that patients with schizophrenia receiving medications, regardless of the type, were two times more likely to have a better outcome than patients receiving a placebo. Both positive and negative

symptoms were decreased at a similar rate, which improved social functioning for these participants. The overall quality of life was also increased for patients receiving pharmacological therapy in this study [9]. While this study did not focus on specific medications and their effect on anger and aggression, decreasing psychotic episodes and symptoms of schizophrenia will decrease feelings of aggression.

Specific Medications

While all antipsychotics aim to improve outcomes for schizophrenia, there is current research on specific medications that affect specifically on anger and aggression. A second-generation antipsychotic, clozapine has been proven to reduce aggression and violence in schizophrenia. Clozapine also improves work-related activity and decreases the rate of hospitalization [8]. Quinn and Kolla [10] summarized multiple studies and articles regarding treatments of anger and aggression in schizophrenia. The conclusion was made that antipsychotics are necessary to treat acute violence driven by a state of psychosis. It goes further by stating that clozapine has certain properties that act on aggressive behavior. A few studies are described to back up this conclusion. A level four retrospective study looks at schizophrenia in the inpatient setting and shows a decrease in the use of restraints and aggressive behavior when taking clozapine. Two level-two studies back up this result. Another study uses a randomized controlled trial (RCT) to conclude that clozapine reduces hostility among hospitalized patients with schizophrenia [10].

Patchan et al. [11] summarized the prevalence of violence and incarceration in people with schizophrenia and current recommendations about using clozapine. Clozapine is stated to be one of the most underutilized psychiatric medications that are proven by evidence. This systematic review included six animal studies, four RCT studies, twelve prospective non-controlled studies, twenty-two retrospective, and four case studies to determine that clozapine reduces violent and aggressive behavior in schizophrenia. Another study found clozapine to be the only agent to reduce hostility according to PANSS score levels [11]. This review also indicated that clozapine is the only FDA approved drug to decrease the risk of suicide in schizophrenia. The Schizophrenia Patient Outcomes Research Team recommends giving this medication for violent and aggressive behavior [8]. The only downside is that there are serious side effects such as with other antipsychotics. Agranulocytosis, or low white blood cell counts, is a rare but not so uncommon side effect of this drug [8]. Therapeutic levels must also be maintained by adhering to the medication schedule.

Adjuncts to Pharmacological Therapy

Along with antipsychotics, cannabidiol (CBD) and polytherapy are used to produce greater effects on reducing psychosis in schizophrenia. These are newer in treating schizophrenia, but they are effective. McGuire et al. [12] included 83 participants in a multicenter, double-blind, randomized trial. The PANSS, brief assessment of cognition in schizophrenia (BACS), global assessment of functioning scale (GAF) and improvement and severity scales of the clinical global impressions scale (CGI-I, CGI-S) were used. The participants were required to have schizophrenia or a related disorder. Their PANSS score had to be <60, they must have previously had a response to an antipsychotic drug, and they had to be on a stable dose of antipsychotic medication for at least four weeks prior. Half the participants were given 1000 mg/day of CBD in two divided doses and the other half was given placebo. This was given along with their previously prescribed antipsychotic medication. Common antipsychotic medications were aripiprazole, olanzapine, and risperidone. They were reassessed and had labs drawn on day 8, day 22, and day 43 of the study. The results indicated that positive symptoms were greatly reduced. The negative symptoms did not increase much from the placebo group. GAF scores also increased indicating a low level of improved functioning, but not enough to be significant [12]. CBD is thought to play a role in antagonism of dopamine receptors and has been seen to have a good outcome when combined with antipsychotics.

A controversial pharmacological therapy is giving more than one antipsychotic drug, known as polytherapy. Another new therapy under investigation is giving antidepressants along with antipsychotic medication. These have more negative outcomes associated with them and are not proven to be as beneficial for the patient as antipsychotics alone.

Richmond [13] examined the mortality rate and positive effects associated with polypharmacy. More than 60,000 patients were followed for over 20 years to determine that polytherapy does not increase mortality rates of schizophrenia. The combination of clozapine and aripiprazole decreased re-hospitalization rates in patients with schizophrenia [13]. This indicates combination can be useful in ensuring the stabilization of patients with schizophrenia. One issue with this therapy is that it requires more complex medication adherence. Medication adherence is already a problem that people with schizophrenia face. Increasing patient adherence to medications can ensure that the doses are therapeutic and will be effective in helping to prevent psychosis.

Cognitive Behavioral Therapy

Impaired judgment and impulse control in patients with schizophrenia may contribute to violence. Research has shown that cognitive-behavioral therapy is beneficial in these patients. Recent literature has begun to examine the effectiveness of different types of therapies and the length of time it was conducted. Ahmed et al. [14] examined the effect of cognitive training on reactive aggression. Participants were randomized into two different groups: cognitive remediation training plus social cognition training (CRT+SCT) or only CRT. CRT is a treatment that targets functions such as memory, attention control, or problem-solving. SCT focuses on emotional regulation and social skills needed to function in society. After 36 hours of training, participants were examined based on neurocognition, mentalization, facial affect recognition, emotion regulation, and impulsivity. Results indicated that the CRT+SCT group showed greater improvements in impulse control. Other aspects of the study indicated that both groups were similar in improving cognition skills.

Mortan et al. [15] compared two cognitive-behavioral group therapy programs. Groups consisted of routine care (RC), RC plus COPE-CBT or RC plus CBT groups. CBT included “monitoring the relationship between the situations and thoughts accompanying the symptoms, cognitive restructuring and imaginal exposure” [15]. The COPE-CBT group only included coping strategies. Some of the results were nonsignificant such as the reduction of hallucination, delusion, and positive symptoms. The two groups did not differ for reducing anxiety and depression but were both more effective than routine care only. This research could be improved by evaluating different lengths of treatment.

Some patients may not be able to tolerate medications such as clozapine for various reasons. It is important to have a treatment plan ready for patients in that situation. A randomized control trial was conducted to determine if cognitive behavioral therapy (CBT) would be an effective alternative to medication. CBT was conducted weekly by psychological therapists and focused on positive symptoms, social issues, and emotional difficulties. None of the usual treatment was withheld from patients such as mental health services, early intervention in psychosis, or inpatient settings. There was no indication of adverse effects of therapy. “Fewer suicidal crises, symptom exacerbations, and deteriorations occurred in those allocated to CBT” [16]. Some of the benefits to treatment were a reduction in positive symptoms, emotional distress, and auditory hallucinations. These benefits of CBT after 9 months of

treatment, however, were not evident during the follow up at 21 months. Results did not support the routine use of CBT in patients who were resistant to clozapine.

Functioning in Community

Returning patients with schizophrenia into the community and staying there is the overall goal of identifying and decreasing feelings of anger and aggression within this population. Reynolds et al. [17], discussed the overall functioning of inpatient vs. community-dwelling patients. This peer-reviewed study of 52 patients revealed that the inpatient population experienced more severe negative symptoms and an overall decreased level of functioning, measured by several pre-established scales compared to outpatient settings. One-third of the participants in the outpatient setting could hold a job regardless of whether they were living independently or in a supervised residential center [17]. Getting patients stabilized and out into the community safely is a priority to improve the quality of life for people with schizophrenia. Decreasing episodes of psychosis will in turn decrease anger and aggression, making it more realistic to function in society.

Summary of the Literature Review

Antipsychotic medications are the first line of therapy for patients with schizophrenia [10]. All classes decrease the prevalence of psychotic episodes and promote stabilization in those affected [9]. Anger and aggression in schizophrenia play a role in violence which decreases functioning in the community. Decreasing episodes and aggression specifically improve outcomes in more than half of the people who have them prescribed. Clozapine has been approved to decrease aggression and suicide in schizophrenia [11]. Other adjective therapies are also being researched and may have a positive impact on the course of this disorder. Cognitive-behavioral therapy helps to reduce short term incidence of aggressive behaviors in patients with schizophrenia. Morrison et al. [16] said the long-term effects of CBT have not been revealed. Different combinations and lengths of treatment for CBT are emerging in research. Medication and cognitive therapies are highly individualized to meet specific patient needs. The patient may benefit from either pharmacological or cognitive therapies and it is highly likely that patients with schizophrenia benefit from a combination of both. Having one or both can decrease the prevalence of symptoms. In any case, patients must adhere to their chosen therapies to maintain therapeutic levels (see Figure 2).

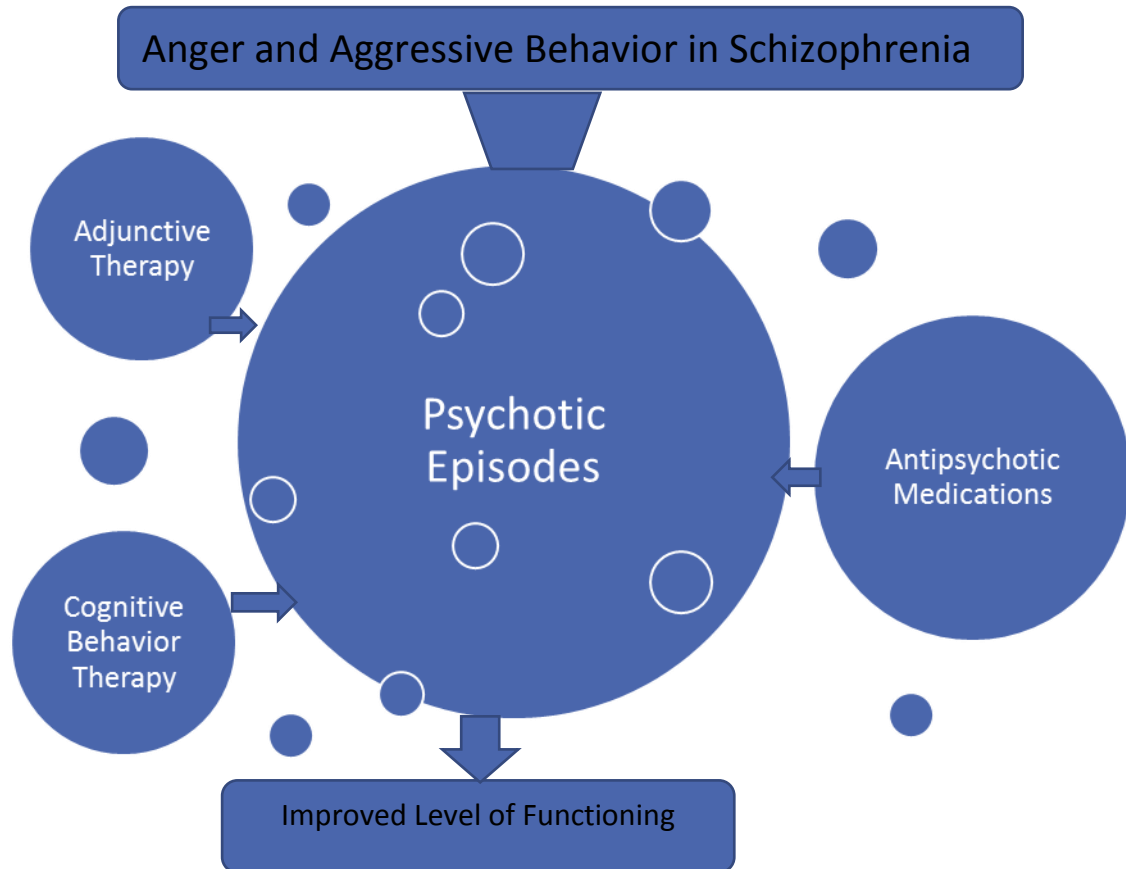






Figure No. 2: Interventions to prevent anger and aggressive behavior in schizophrenia

CONCLUSION

Many factors play a role in the development of schizophrenia. Command hallucination is a psychiatric emergency and need to be addressed right away. Paranoia, treatment noncompliance, homelessness, lack of income and other stressors in life are factors that people with schizophrenia suffer. No matter what the cause, this disorder puts individuals at risk for aggression and violence towards themselves and others. This highly variable disorder requires treatment to improve the level of functioning for those affected. Further studies should be conducted on the effectiveness of treatments for aggressive behavior in patients with schizophrenia. Medications are highly effective for most patients, but some patients require additional or alternative therapy.

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