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Analysis of The Decrease in Sign and Symptoms of Hallucinations with The Application of Aerobic Exercise Physical Activity Therapy

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Abstract

Schizophrenia is a mental disorder that can cause sufferers to experience deviations in thoughts, perceptions, emotions and behavior. People with schizophrenia can experience delusions or hallucinations. Hallucination are one of the positive symptoms of schizophrenia, people with schizophrenia who experience hallucinations can hear voices or see things that are not real. The aim of this scientific work is to provide an overview regarding the application of nursing care to patients with hallucinations through physical activity used is aerobic exercise. The client named Mr. F is 28 years old who experiences visual and auditory hallucinations. The nursing actions given to control hallucinations are based on the standards of nursing care that have been set for the client is generalist nursing interventions for 1 days and continued with aerobic exercise physical activity therapy as a distraction technique for 11 days. The results of the application of aerobic exercise physical activity distraction therapy showed a decrease in signs of hallucinations from a score of 19 to a score of 8. Aerobic exercise therapy can be applied as an innovative nursing action to control hallucinations in providing nursing care in hospitals

Keywords: hallucinations, schizophrenia, aerobic exercise therapy

Introduction

Mental health is one of the important aspects of life. Mental health is a condition where individuals can develop physically, mentally, spiritually, and socially so that they can realize their abilities, can cope with pressure, can work productively, and are able to contribute to their surroundings.

According to the Basic Health Research (Riskesdas) in 2018 showed data that more than 19 million people aged more than 15 years experienced mental emotional disorders and more than 12 million people aged more than 15 years experienced depression. Based on these data, mental health problems are a problem that must be considered.

According to WHO (2016), conditions that are included in mental disorders are depression, bipolar disorder, Schizophrenia and psychosis, dementia, and developmental disorders (Ministry of Health, 2023).

Mental disorders can occur in men and women. According to the WHO report (2022) states that people with mental disorders in the world in 2019 reached 970 million with a prevalence of 47.6% men and 52.4% women with the majority of mental disorders experienced, namely anxiety disorders 31%, depressive disorders 28.9%, growth disorders 11.1%, attention disorders or hyperactivity 8.8%, bipolar disorders 4.1%, behavioral disorders 4.1%, autism spectrum disorders 2.9%, schizophrenia 2.5%, and

eating disorders 1.4%.

Based on these conditions, one of the mental disorders that must be considered is schizophrenia. Based on the data previously described the prevalence of schizophrenia in the world is quite low compared to other mental disorders. However, this does not make the problem go unnoticed.

Schizophrenia is a mental disorder condition that can cause sufferers to experience deviations in thoughts, perceptions, emotions, and behavior. Individuals diagnosed with schizophrenia can experience changes in personal, family, social, educational, and occupational functions that will affect aspects of the individual's life. Based on WHO data (2022), it is stated that schizophrenia affects around 24 million people or 1 in 300 people (0.32%) worldwide. Based on Riskesdas data (2018), the prevalence of schizophrenia in Indonesia reached 6.7 per 1000 households, which indicates that out of 1000 households there are 6.7 households that have members diagnosed with schizophrenia.

Schizophrenia arises because it is caused by an imbalance of biochemical substances (neurotransmitters) in the nerves of the brain which can be caused by genetic factors such as having family members who suffer from schizophrenia, the presence of previous severe illnesses such as seizures, and severe life situations that can be a psychological stressor (WHO, 2019). Schizophrenia is characterized by delusions, hallucinations, disorganized speech, difficulty thinking, and lack of motivation (American Psychiatric Association, 2020). Hallucinations are one of the positive symptoms of schizophrenia where a person with schizophrenia who experiences hallucinations can hear voices or see things that are not real.

Hallucination is a condition of reality

disorientation where the sufferer responds or judges the stimulus received by the five senses and is a form of perception disorder (Pratiwi & Arni, 2022). Hallucinations that appear in individuals can be caused by predisposing and precipitating factors (Stuart, 2016).

Hallucinations are a condition that must be considered because otherwise the sufferer will lose control of self-control and behavior. Handling hallucinations can be done by performing nursing interventions both generalist and specialist nurses. Generalist nursing interventions that can be done to reduce hallucination symptoms are by training to rebuke, being ignorant, conversing with others, distraction by doing regular activities, and training to be obedient in taking medication (Keliat, et al., 2019).

In addition, distraction therapy by doing physical activity is also one of the ways that can be done to reduce the signs and symptoms of hallucinations. Physical activity is an activity that increases energy expenditure and energy. Aerobic exercise is included in physical activity with exercise which has a definition of activities that are carried out in a structured and planned manner and are often categorized as sports. In previous research, it was stated that the application of aerobic exercise therapy for 30 minutes with a frequency of twice a day was influential in reducing hallucination symptoms (Puspita, Pratiwi, & Suryati., 2023).

Another study mentioned that low participation in physical activity has a correlation with the onset of negative symptoms, side effects of antipsychotic drugs, social isolation, and an unhealthy lifestyle and can exacerbate depressive symptoms, and interfere with psychosocial functioning in people with schizophrenia (García-Garcés, L., et al., 2021).

Based on the description above, it is

known that one of the therapies that can be applied to reduce the signs and symptoms of hallucinations in clients with schizophrenia is by doing physical activity or exercise. In Indonesia, previous studies have applied aerobic exercise to clients with hallucinations with a frequency of two to three times a week, so the authors are interested in analyzing the application of aerobic exercise to patients with visual and auditory hallucinations with a frequency of six times a week performed in the morning to reduce the signs and symptoms of hallucinations experienced. So, the author believes in analyzing the effectiveness of reducing the signs and symptoms of hallucinations by applying distraction therapy by doing aerobic exercise physical activity in hallucination patients.

Research Methodology

This nursing care was carried out for 12 days, from Tuesday, September 19, 2023 to Monday, October 2, 2023. This implementation is carried out starting from assessment to training how to overcome hallucinations with distraction by implementing scheduled activities of physical activity in the form of aerobic exercise. The implementation applied is the provision of generalist nursing interventions on September 19, 2023 and continued with the provision of distraction nursing interventions by doing physical activity aerobic exercise until October 2, 2023.

This scientific work focuses on the application of aerobic exercise physical activity therapy in patients with hallucinations. Therefore, the criteria for the main managed patients who are treated are schizophrenia patients with positive symptoms in the form of hallucinations. Based on these criteria, the patient who became the main

managed case was Mr. F aged 28 years who experienced hallucinations. Mr. F, 28 years old, who experienced hallucinations. Aerobic exercise physical activity therapy is carried out for 11 days with a duration of 15 minutes every 08.00 am. In the process of implementation, the author directs the patient to follow the movements of the exercise taught as a way of distracting the hallucinations felt.

Evaluation of signs and symptoms of hallucinations using instruments consisting of cognitive aspects, affective aspects, physiological aspects, behavioral aspects, and social aspects. Measurement of the ability to control hallucinations is done by giving a score on the instrument of the client's ability to control hallucinations. The more total abilities owned, the better the level of hallucination control in patients. Measurement of signs and symptoms as well as the patient's ability is done every day during the meeting with the patient.

Results and Discussion

a. Demographic Data

Patient with the initials F is a male schizophrenic. The high prevalence of men in schizophrenia can be caused by the onset of schizophrenia in men being younger than women, namely 15-25 years (Sheila & videback, 2020). Other studies also mention that the onset of schizophrenia is more common in late adolescence and in the 20s and the onset in men tends to be faster than in women (Rony, et al., 2023).

The high prevalence of mental disorders in men can be caused by psychological pressure due to the failure of the role of breadwinner, leader and protector of the family in the face of economic difficulties and various limitations associated with

poverty and strong male ideals that make men not easy to express their feelings and not easy to seek help so that mental disorders in men tend not to be detected immediately and only detected after severe (Susilawati, 2020).

Mr. F's age is 28 years old, which is included in adulthood and productive age. However, at this age of adulthood, individuals are also prone to inability to cope with problems so that it will easily cause emotional disturbances and individuals who are unable to get through it properly can experience mental disorders (Maulana, Hernawaty, & Shalahuddin., 2021).

Another study states that individuals aged 25-35 years have a greater risk than individuals aged 17-24 years (Erlina (2010) in Wardani & Dewi (2018)). The study also mentioned that schizophrenia in men usually occurs in late adolescence (20 years) or early adulthood or within 30 years of age. The client's age is included in adulthood and productive age where at that age it is vulnerable to mental disorders.

b. Predisposing & Precipitating Factors

The client said he had been admitted three times with a medical diagnosis of schizophrenia. The client has a history of drug withdrawal, smoking, drug consumption, and drinking alcohol since junior high school. Unpleasant life experiences can trigger the onset of schizophrenia symptoms where the peak of the initial period of psychosis occurs in late adolescence or early adulthood where at that age changes in brain structure and function occur (Gallagher, et al., 2016).

Drugs can cause the central nervous

system to experience depression, resulting in the appearance of psychotic symptoms (Stuart, et al., 2016). This is in line with research conducted by Natalia & Humaedi (2020) which states that drug use can cause hallucinatory side effects and can cause excessive fear and anxiety disorders which can cause mental disorders such as depression and continuous anxiety. Other research states that there are changes in brain structure that underlie that schizophrenia is a neurodegenerative disease, but other factors such as drug abuse such as drugs and alcohol also contribute to structural brain changes in schizophrenia patients (Gidler, Confino, Woesner, 2019).

The client wants to make his parents happy by having enough income but this has not been achieved. Based on this, there is a correlation between low and middle income and mental disorders (Hoisington, et al., 2019). These unpleasant life experiences can be one of the psychological factors that make clients have a negative self-concept, inadequate personality and morality, and low intelligence (Prabowo, 2014).

The social environment and difficulties experienced at school or work can lead to mental disorders (Shives, 2012). The client's past experiences caused a traumatic event in the client that made the client experience hallucinatory sensory perception disorder.

c. Application of Aerobic Exercise Physical Activity Therapy

The application of physical activity therapy to clients helps in improving mental health. Exercise therapy is considered capable of improving positive and negative symptoms and

improving quality of life in clients with schizophrenia (Girdler, Confino, & Woesner., 2019). Previous research also conveyed that aerobic exercise had a significant correlation in cognitive aspects such as reasoning, problem solving, processing speed, social cognition and working memory, as well as other functions in the daily lives of people with schizophrenia.

In another study, a comparison of the application of exercise twice a week with occupational therapy on the mental health of schizophrenia patients showed that exercise therapy significantly reduced schizophrenia symptoms compared to occupational therapy (Sheewe et al., 2013). Physical activity is also considered to reduce the side effects of antipsychotics.

In the cognitive aspect, the score of signs and symptoms experienced by clients tends to be unstable. This can be caused by the condition of clients who experience cognitive impairment due to the condition of schizophrenia experienced where cognitive impairment is considered as a third symptom in addition to negative and positive symptoms in schizophrenia (Dai, Y., Ding, H., Lu, X. et al., 2022).

Previous research suggests that aerobic exercise has a significant correlation in cognitive aspects such as reasoning, problem solving, processing speed, social cognition and working memory, as well as other functions in the daily lives of people with schizophrenia (Girdler, Confino, & Woesner., 2019). However, research conducted by Dai, Y., Ding, H., Lu, X. et al (2022) showed that aerobic exercise performed for eight weeks did not significantly improve cognitive functions such as processing speed or cognitive flexibility in chronic schizophrenia patients. The study explained that this could be due to the

duration of physical exercise that has a significant impact and differences in specific exercise patterns and intensities.

In the affective aspect, there was a decrease in the score of signs and symptoms. Schizophrenia is caused by an imbalance in the dopamine and serotonin neurotransmitter systems (Stuart, 2013). Dopamine has the function of affecting motivation and mood, serotonin has a function in the learning process and memory.

Physical activity is considered to produce dopamine and serotonin naturally. Aerobic exercise is considered to increase the concentration of dopamine, especially in the hypothalamus and midbrain and increase the concentration of serotonin in the brain, especially in the hippocampus, hypothalamus, and frontal cortex, which causes feelings of pleasure, a sense of satisfaction and overcomes stress, emotions, and depression (Maurus, et al., 2019).

In physiological aspects, the score of signs and symptoms has not changed. Points on physiological aspects that are often experienced by clients are difficulty sleeping. In a previous study, it was mentioned that aerobic exercise therapy in schizophrenia patients conducted for 10 weeks can help reduce hallucinations and improve better sleep patterns (Handoyo & Setiono., 2011).

However, in this study, the exercises were only performed for 11 days and did not show any changes in the signs and symptoms of sleeplessness. In patients with schizophrenia, sleep disturbances are often caused by several factors, one of which is the emergence of thought disorders or hallucinations (Kaskie, Graziano, & Ferrarelli., 2017). In Mr.

F's client, hallucinations tend to appear at night. In Mr. F's client, hallucinations tend to appear at night and aerobic exercise distraction is only done in the morning, so this therapy has no significant impact.

In the behavioral aspect, the score of signs and symptoms also did not change. The behavior that most often appears as signs and symptoms of hallucinations in Mr. F is lack of self-care. Mr. F is less able to care for himself. The cognitive impairment experienced by Mr. F due to his schizophrenic condition resulted in the client's inability to organize and care for himself (Emilyani, 2015). Mr. F's cognitive abilities were not stable during therapy. Mr. F's unstable cognitive abilities during therapy also affect his ability to organize and care for himself.

In the social aspect, there was a significant decrease in signs and symptoms. In previous studies, structured physical exercise is considered to improve psychotic symptoms including in schizophrenia patients can improve social function and quality of life (Dai, Y., Ding, H., Lu, X. et al., 2022). In addition, there are studies that mention that aerobic exercise in schizophrenia patients can cause psychological changes such as social support, a sense of autonomy, improved body image, self-efficacy which will improve the ability to socialize in patients (Ho, P. A., Dahle, D. N., & Noordsy, D. L., 2018). This therapy has a significant impact on the client's social aspects where the client begins to open and socialize and actively participate in therapy together with other clients in the same room.

Other factors that can affect the score of signs and symptoms of hallucinations in clients are the frequency of client hospitalization and

the length of treatment. It is known that the client has been hospitalized three times related to his hallucinatory condition. Previous research states that the length of treatment also affects the recurrence of signs and symptoms experienced by clients where clients feel bored with daily activities that are different from the activities that clients usually do. In addition, the duration of the client suffering from schizophrenia also affects the effectiveness of reducing signs and symptoms where clients who have been diagnosed for a long time also have a long time to heal (Yuli, et al., 2016).

Therefore, it is important to maintain the client's motivation to control hallucinations. In this case, the client had a considerable desire to control his hallucinations and said he wanted to recover soon, but sometimes clients need support or motivation from nurses or others around them to do activities that have been trained to control hallucinations.

Conclusions

The main nursing diagnosis found in Mr. F's client is sensory perception disorder: visual and auditory hallucinations. Mr. F is a sensory perception disorder: visual and auditory hallucinations. Hallucinations experienced by Mr. F is seeing black or white shadows and hearing whispering sounds that are not very clear. Signs and symptoms of hallucinations that appear to the client are that the client cannot focus the mind, talks circumstantially, is indifferent to the environment, and withdraws.

These hallucinations make the client uncomfortable and difficult to communicate with others. Supporting predisposing factors are that while at school, the client was often teased and

fought until he participated in a brawl. Favorable precipitating factors are that the client does not take medication regularly and starts consuming alcohol and drugs and the client's inability to control feelings of anger or ineffective coping mechanisms.

The application of generalist nursing actions given to clients is rebuking, being ignorant, having conversations, making and doing scheduled activities, and obeying taking medication. Modification therapy that goes into the client's distraction therapy is distraction therapy by doing aerobic gymnastics physical activity which is carried out to help clients control hallucinations by exercising. The implementation of physical activity distraction therapy aerobic gymnastics is carried out for 11 days with a duration of 20 minutes and is carried out 6 times a week at 08.00 am.

Evaluation of the implementation of nursing care for visual and auditory hallucinations with aerobic exercise physical activity distraction therapy in clients shows a decrease in signs and symptoms of hallucinations. The implementation of aerobic exercise physical activity distraction therapy is considered acceptable and well followed by Mr. F, marked by Mr. F's physical activity distraction therapy. F, marked by Mr. Mr. F is able to follow the gymnastics from start to finish even though sometimes it needs to be motivated and directed. The results of measuring signs and symptoms in clients show a decrease in signs and symptoms from a score of 19 to 8.

Future research is expected to carry out therapy on more specific client criteria where the application of aerobic exercise physical activity distraction therapy should be carried out when the client experiences hallucinations so that the benefits provided as a distraction against hallucinations can be directly felt

by the client. The application of aerobic exercise physical activity therapy is also better applied to patients who have moderate cognitive abilities who can still follow orders so that the effectiveness of aerobic exercise in improving cognitive aspects in schizophrenic clients can be more visible.

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