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Schizophrenia: Overview, Treatment options and future possibilities

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Abstract: Schizophrenia is a chronic and disabling disorder, characterized by different symptoms such as positive and negative. The objective of this review is to provide information that may be useful for clinicians treating schizophrenia patients as well as for researchers to find information. A number of patients may lack insight about the presence of the type of symptoms and the available options for their treatment. Patients may see clinical care and clinicians must be vigilant for the presence of symptoms and the available treatment plans. Yoga as a holistic approach for schizophrenia is said to be effective along the medications. Pharmacological as well as non pharmacological approaches are available for schizophrenia and new and effective treatments are needed, hence potential research is yet to be done for the treatment of schizophrenia.

Keywords: schizophrenia, symptoms, prevalence, diagnosis, treatment, medications, management, outlook

Methods:

Different articles were searched to identify relevant information to my topic. The eligibility criteria for selection of studies are compilation of information of schizophrenia, especially their effectiveness in addressing issues related o management of schizophrenia. By the help of Google Scholar and PubMed, a number of literature searches were done using the terms schizophrenia, definition, treatment, therapy, symptoms, available medications, future possibilities, management and quality of life. Many of these searches were conducted in common. Results were analysed according to the latest research and review articles published, in order to find the current information. The content of the search results was divided into the following section: Terminology, Assessment, Available treatment, future options and best clinical practices.

Introduction: [1, 2, 3]

Schizophrenia is a chronic and disabling disorder, characterized by heterogeneous positive and negative symptom constellations. The distinction between positive and negative symptoms originated in the field of neurology and was later adopted in psychiatry; in schizophrenia, this distinction corresponds to clinical observations and allows the disorder to be described in terms of symptom domains.

Positive Symptoms [5, 16, 17, 18]

In this case, the word positive does not mean good. It refers to added thoughts or actions that aren't based on reality. Also called psychotic symptoms and can include: Delusion, Hallucinations, and Catatonia.

Disorganized Symptoms [16, 17, 18]

These are positive symptoms that show that the person cannot think clearly or respond as expected. Examples include: Talking in sentences that do not make sense or using nonsense words, making it difficult for the person to communicate or hold a conversation. Shifting quickly from one thought to the next without obvious or logical connections between them, Moving slowly, Being unable to make decisions, Writing excessively but without meaning, Forgetting or losing things, Repeating movements or gestures, like pacing or walking in circles, Having problems making sense of everyday sights, sounds, and feelings.

Cognitive Symptoms [16, 17, 18]

The person will have trouble Understanding information and using it to make decisions (a doctor might call this poor executive functioning). Focusing or paying attention. Using their information immediately after learning it (this is called working memory), Recognizing that they have any of these problems.

Negative Symptoms [5, 16, 17, 18]

The word "negative" here does not mean "bad." It notes the absence of normal behaviours in people with schizophrenia. Negative symptoms of schizophrenia include: Lack of emotion or a limited range of emotions. Withdrawal from family, friends, and social activities, less energy, speaking less, lack of motivation and loss of pleasure or interest in life.

Myths of Schizophrenia: [5, 7, 8]

- It causes multiple personalities
- It makes you violent or dangerous
- Bad parenting causes it
- You’ll have it, if your parent does
- You are not smart if you have it
- It means living in a facility
- You cannot do a job
- You cannot recover from it
- It is diagnosed by a blood test

Causes of Schizophrenia: [10, 11, 12]

The exact reason of schizophrenia is unknown, but researchers have identified several possible reasons that might combine to put people at risk. Also, Cutting-edge technology has been in use to make discoveries.

Genes: A whole Genome Sequencing (WGS) study of schizophrenia was published recently by scientist. It is a technology that depicts the entire DNA make-up. By the help of this technology, scientists observed mutations that had never been seen earlier. According to that, it was suggested that several differences in the boundaries of DNA structure would raise risk of this disease. This change was highly observed in people with schizophrenia. However in depth change involved in the disease is yet to be found.

Brain connections: Advancement of the technology has allowed scientists to search new clues into schizophrenia inside the brain. For the first time ever, a lower level of a protein was found in the connections between neurons in the brain scan of people with schizophrenia. However the significance of schizophrenia is not clear yet.

With the latest discovery, new treatments for the memory related symptoms could be found by the researches. Currently, schizophrenia treatment only target symptoms of psychosis like delusions.

Diagnoses of Schizophrenia: [18, 19, 20, 21, 25]

If symptoms of schizophrenia are present, the doctor will perform a complete medical history and sometimes a physical exam. While there are no laboratory tests to specifically diagnose schizophrenia, the doctor may use various tests, and possibly blood tests or brain imaging studies, to rule out another physical illness or intoxication (substance-induced psychosis) as the cause of the symptoms.

If the doctor finds no other physical reason for the schizophrenia symptoms, they may refer the person to a psychiatrist or psychologist, mental health professionals trained to diagnose and treat mental illnesses. Psychiatrists and psychologists use specially designed interviews and assessment tools to evaluate a person for a psychotic disorder. The therapist bases their diagnosis on the person's and family's report of symptoms and their observation of the person's attitude and behaviour.

A person is diagnosed with schizophrenia if they have at least two of these symptoms for at least 6 months: Delusions, Hallucinations, Disorganized speech, Disorganized or catatonic behaviour.

During the 6 months, the person must have a month of active symptoms. (It can be less with successful treatment.) Symptoms should negatively affect them socially or at work, and can't be caused by any other condition.

Recently, the American Psychiatric association (APA) and the World Health Organization (WHO) have revised their suggestions for the classification and diagnosis of Schizophrenia. This includes: No more grouping the illness into subtypes like paranoid schizophrenia. Delusions and hallucinations as major symptoms. Focusing on the duration of the symptoms (1-6 months) and the causes behind them. A rating system to gauge both the mental and physical symptoms of schizophrenia.

Treatments of Schizophrenia: [5, 6, 13, 23, 14, 15, 34]

Medication [13, 23]

Medications are the cornerstone of schizophrenia treatment, and antipsychotic medications are the most commonly prescribed drugs. They're thought to control symptoms by affecting the brain neurotransmitter dopamine.

The goal of treatment with antipsychotic medications is to effectively manage signs and symptoms at the lowest possible dose. The psychiatrist may try different drugs, different doses or combinations over time to achieve the desired result. Other medications also may help, such as antidepressants or anti-anxiety drugs. It can take several weeks to notice an improvement in symptoms.

Because medications for schizophrenia can cause serious side effects, people with schizophrenia may be reluctant to take them. Willingness to cooperate with treatment may affect drug choice. For example, someone who is resistant to taking medication consistently may need to be given injections instead of taking a pill.

Ask your doctor about the benefits and side effects of any medication that's prescribed.

First Generation Antipsychotics

These first-generation antipsychotics have frequent and potentially significant neurological side effects, including the possibility of developing a movement disorder (tardive dyskinesia) that may or may not be reversible. First-generation antipsychotics include:

- Chlorpromazine
- Fluphenazine
- Haloperidol
- Perphenazine

These antipsychotics are often cheaper than second-generation antipsychotics, especially the generic versions, which can be an important consideration when long-term treatment is necessary.

Second Generation Antipsychotics

These newer, second-generation medications are generally preferred because they pose a lower risk of serious side effects than do first-generation antipsychotics. Second-generation antipsychotics include:

- Aripiprazole (Abilify)
- Asenapine (Saphris)
- Brexpiprazole (Rexulti)
- Cariprazine (Vraylar)
- Clozapine (Clozaril, Versacloz)
- Iloperidone (Fanapt)
- Lurasidone (Latuda)
- Olanzapine (Zyprexa)
- Paliperidone (Invega)
- Quetiapine (Seroquel)
- Risperidone (Risperdal)
- Ziprasidone (Geodon)

Long-acting Injectable Antipsychotics [33]

Some antipsychotics may be given as an intramuscular or subcutaneous injection. They are usually given every two to four weeks, depending on the medication. Ask your doctor about more information on injectable medications. This may be an option if someone has a preference for fewer pills and may help with adherence.

Common medications that are available as an injection include:

- Aripiprazole (Abilify Maintena, Aristada)
- Fluphenazine decanoate
- Haloperidol decanoate
- Paliperidone (Invega Sustenna, Invega Trinza)
- Risperidone (Risperdal Consta, Perseris)

Psychosocial Interventions [28-32]

Once psychosis recedes, in addition to continuing on medication, psychological and social (psychosocial) interventions are important. These may include:

- **Individual therapy.** Psychotherapy may help to normalize thought patterns. Also, learning to cope with stress and identify early warning signs of relapse can help people with schizophrenia manage their illness.
- **Social skills training.** This focuses on improving communication and social interactions and improving the ability to participate in daily activities.
- **Family therapy.** This provides support and education to families dealing with schizophrenia.
- **Vocational rehabilitation and supported employment.** This focuses on helping people with schizophrenia prepare for, find and keep jobs.

Most individuals with schizophrenia require some form of daily living support. Many communities have programs to help people with schizophrenia with jobs, housing, self-help groups and crisis situations. A case manager or someone on the treatment team can help find resources. With appropriate treatment, most people with schizophrenia can manage their illness.

Holistic management: Yoga [6, 8, 11, 22, 23]

Yoga therapy can also manage schizophrenia symptoms, but in combination with pharmacological medications. Yoga, as an add on to antipsychotic medications; help treat both positive and negative symptoms, as compared to medications alone. A number of pharmacological interventions such as obesity, endocrinological and menstrual dysfunction may be positively treated by the help of yoga therapy.

Hospitalization [23, 25]

During crisis periods or times of severe symptoms, hospitalization may be necessary to ensure safety, proper nutrition, adequate sleep and basic hygiene.

Electroconvulsive Therapy [22, 23, 25]

For adults with schizophrenia who do not respond to drug therapy, electroconvulsive therapy (ECT) may be considered. ECT may be helpful for someone who also has depression.

As per the ongoing schizophrenia research, the treatment of the diseases continues to evolve.

New medications: Most schizophrenia medications target the neurotransmitter dopamine. But scientists are working on a new generation of drugs aimed at other neurotransmitters.

Targeted Psychotherapy: Several studies show that psychotherapy works well to ease schizophrenia symptoms. This treatment could be a possible option to traditional therapy.

Brain Stimulation: This is one of the newest schizophrenia treatments which include Transcranial magnetic stimulation (TMS) and Deep brain stimulation. This treatment could be an alternative to medication, but research to find its effectiveness for people with schizophrenia is yet to be done by the researchers.

Schizophrenia Research Outlook [26, 27, 28]

New treatments could help people with schizophrenia in the future; scientists say the best approach is to advance current treatments.

Studies suggest that a no. of people with schizophrenia do not get the treatment for the illness. In order to bridge the gap, access to mental health services, awareness about symptoms and available treatment options should be acknowledged. It is also suggested by the researches that mental health programs must address stigma and prejudice against people with mental illness.

Opportunities for Intervention and Actions to Take [29, 30, 31, 33]

➢ <u>Recognition</u>

- After urgent symptoms are addressed, take time to focus exclusively on symptoms and signs
- Pay particular attention to the patient's level of interaction, interest, and engagement
- Evaluate body language, facial expressions, gestures, and eye contact
- Ask questions about the patient's daily activities and interactions, social activities inside and outside the family, work or school involvement, and pleasurable activities or hobbies
- Ask informants about the patient's normal daily behaviour relevant to symptoms
- Consider administering the symptom assessment tool

➢ Assessment

- Assess affect and behaviour that may suggest symptoms
- Assess psychiatric and medical co-morbidities that may present
- Assess medication side effects that may present
- Gauge the level of impairment by comparing the patient to what would be expected from a healthy age and sex matched individual

➢ Management

- Optimize current medications to treat/maintain stability of different symptoms
- Minimize medication side effects that may aggravate different kind of symptoms
- Consider medication adjustment or switch to medication with efficacy in treating the particular type of symptom
- Treat co-morbid medical and psychiatric conditions if possible
- Refer to a specialist for treatment of a co-morbid medical condition if necessary
- Refer to a psychologist for psychosocial intervention Encourage self-care, social interaction, and environmental stimulation

Conclusion

Schizophrenia is a complex disorder that requires a comprehensive treatment plan suggested by the clinicians. There are available pharmacological and non-pharmacological treatment options, yet a lot of research has to be performing to find a potential cure for schizophrenia in future.

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