

Schizophrenia from New Technology Perspective

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A fundamental human right, mental health is an essential of our overall health and well-being. It means having good mental health needs one can have some functions such as connecting and copying, thus a mental health ranges from a full of well-being state to weakening of it [1]. Although mental health supports individual well-being, it is necessary for well-being of society indeed.

Mental health has some functions consisting of coping with life issues, making communications, learning and developing skills and generally it plays an active role in the community [1,2]. In contrast of mental well-being, mental illness is considered a condition with changes in the mind, emotions and/or behaviors of a person [3,4]. Mental illness takes a variety of diseases including depression, attention-deficit hyperactivity disorder, autism spectrum disorders and Schizophrenia [4]. Due to its connection to high rates of disability and premature death, violations of human rights, and productivity losses, Schizophrenia has been designated a priority disorder.

A major concern is Schizophrenia, which affects approximately one in 200 adults: It is the most debilitating of all diseases when it is at its worst. Compared to the general population, people with Schizophrenia or other severe mental health conditions typically die frequently from preventable physical diseases 10 to 20 years earlier, frequently from preventable physical diseases [1]. Schizophrenia is an extreme mental problem with a regular beginning in youth and youthful adulthood. Globally, the disease has a prevalence of

0.3%-0.7% [5] and is thought to account for about 1% of disability-adjusted life years. Schizophrenia is a long-term mental illness characterized by changes in perception, behaviors, emotions, cognition, and daily activities [6,7].

A scientometric review of research studies has been indexed on WOS from 2000 to the present, facilitated by CiteSpace [8,9], has been identified that family caregivers and stigma were two of the most pressing issues in the field of mental health in Schizophrenia, and they have been the subject of numerous research studies in recent years [10,11].

Schizophrenics and their loved ones frequently experience relapses and hospitalization [6]. The patient, his or her family, and especially the primary caregiver face long-term challenges from Schizophrenia. A difficult aspect of mental health care is the burden of caring for these patients [12]. In terms of psychological and social quality of life, caregivers have a lower quality of life [11]. Families with and without caregiver transition have distinct effects on the caregiving burden from sociodemographic and clinical perspectives. Culture-specific family interventions, community-based mental health services, and recovery will all benefit from investigating Schizophrenia patients' caregiver arrangements and risk factors for burden over time.

Additionally, Schizophrenia sufferers are more stigmatized than other mental illnesses. The stigma associated with mental illness has a wide range of negative effects on individuals, their families, the healthcare system, and society as a whole [14]. Schizophrenia, according to stigma research, is associated with the worst mental representations (such as incompetence, violence, and danger) in the general population [15,16]. Despite much efforts in community treatment, patients still experience stigma and discrimination. Awareness of structural problems in mental healthcare, and paying more attention towards the relational and behavioral aspects in their clients' life concerning stigma and controlling for several variables to identify predictors of stigma are important to prepare a better mental health climate [17,18].

In light of the instances in which deficits in clinical psychology and psychiatry were confronted in encountering caregiver's conditions and stigma about Schizophrenia, approaching higher levels of mental health requires more complete and newer solutions [19-21].

According to Bush *et al.* [22], Artificial Intelligence (AI) projects in the healthcare sector attracted more investment in 2016 than any other sector of the global economy. Illuminating clinical dynamic through bits of knowledge from past information is the substance of proof-based treatment.

A computational strategy known as machine learning (ML) is broadly defined as one that, as opposed to being programmed by a human a priori to deliver a fixed solution, automatically determines methods and parameters to reach an optimal solution to a problem. For clinical psychology and psychiatry, machine-learning approaches specifically focus on learning statistical functions from different dimensions of data sets in order to make predictions about individuals that can be generalized [23]. Machine learning can be particularly useful in studies of the personal characteristics such as individual characteristics, situation-specific factors, and sociocultural contexts that influence the onset, development, maintenance, and remission of psychopathology [24].

To provide more efficient, person-tailored treatments, psychiatry today needs to gain a better understanding of the distinct and common pathophysiological mechanisms that underlie psychiatric disorders such as Schizophrenia [25].

In continuation of the review of studies in WOS, it is shown that less than 30 studies have been conducted in the mental health field since 2017 to better diagnose Schizophrenia using AI, machine learning, or deep learning (DL) [26-30].

Therefore, considering the power of these methods in classifying, predicting, and providing diverse solutions, investing in obtaining more effective methods of identification, prediction, psychotherapy, and treatment using extensive information provided by artificial intelligence and machine learning, can facilitate achieving better mental health in Schizophrenic patients and their caregivers.

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