The Relationship Between Socioeconomic Status and Risk of Schizophrenia

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Abstract. Schizophrenia is a group of unknown etiology of chronic diseases. It has a slow or subacute onset, and its clinical symptoms often vary in different individual. It involves atypicality in sensory perception, thinking, emotion and behavior areas like other disorders, but especially the mental activity in schizophrenia is not coordinated. Studies have led to significant research into the biological causes of schizophrenia, especially gene expression and brain structure. Understanding its environmental factors is important for clinical practice. Thus, this paper focuses on non-genetic studies. It mainly analyzed the environmental influences on schizophrenia from the perspective of risk factors, such as socioeconomic status, education, and social environment. Researchers used a variety of methods, including questionnaires and telephone interviews. At the same time, they looked at parental social status in detail, including family histories of mental illness and individual stress level. Studies have shown that the prevalence of schizophrenia has increased in recent years, especially in urban areas, so this paper chooses to explore the social causes. Numerous data suggest that there is a certain correlation between SES and risk of schizophrenia. One limitation of previous studies is that only the influences of SES were examined, and its interactions with other factors (e.g., genetics) were still unknown. This paper confirms that the environmental factors are associated with schizophrenia, and future research needs to conduct more longitudinal studies. This review can provide guidance to the development of prevention and intervention programs for (at-risk) schizophrenia patients.

Keywords: Schizophrenia · Socioeconomic Status · Parental Educational Level · Wealth Gap

1 Introduction

Schizophrenia is a collection of chronic illnesses of unclear etiology that affects mostly young and middle-aged people with a gradual or chronic start [1]. Clinical symptoms include sensory perception, thinking, emotion, and behavior abnormalities in many areas, as well as mental postural instability. Patients are usually aware and knowledgeable, although some may experience cognitive deterioration as the disease progresses. The

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condition progresses slowly, with frequent bouts, aggravation, or worsening. Although some individuals can be cured or almost healed after receiving pharmacological and psychological treatment. Some patients eventually develop depression and mental incapacity. Schizophrenia is a worldwide public health problem, accounting for 16.8 million disability adjusted life years and being the largest cause of mental illness [1]. Socioeconomic status (SES) is a financial and social combination. It is a person's or a group's social position or class, which is frequently determined by a mix of education, wealth, and employment [2]. Drawing on recent exploration on the brain science of social class. It is contended that the material circumstances wherein individuals grow up and reside lastingly affect their own and social characters. It also impacts how people both think and feel about their social climate and key parts of their social way of behaving.

Based on recent research on schizophrenia, studies mainly focus on two aspects: gene expression and brain structure. The average lifetime risk of developing a mental illness is from 0.86 to 1% [3]. A systematic genealogical survey of schizophrenics (three generations of paternal and maternal lines) found that the prevalence of mental illness among family members of schizophrenics was 6.2 times higher than that of the general population [4]. Lehtonen and Jari compared males and females in clinical and healthy control groups after previous studies suggested that gender is the primary determinant of changes in gene expression associated with schizophrenia [5]. The findings identified dramatic changes in protein and gene expression in schizophrenia that are associated in sex-specific ways with central nervous system development and a variety of other pathways [6]. In addition, mRNA and protein expressions in ipSC-derived cortical neurons are also different in both healthy men and women [5]. Researchers have screened out more than 700 genes and found that nearly 100 that may be linked to schizophrenia. Five other psychiatric disorders share the same risk genes as well. These results also support the hypothesis of abnormal dopamine function in schizophrenia. Shanghai mental health center team studied the resting and cognitive activation state in patients with schizophrenia. According to the results of the study of the regional cerebral blood flow of schizophrenia, patients with cognitive activation conditions did not show the increase in frontal perfusion like control group. It suggests the existence of potential function of the frontal lobe in schizophrenia is low. They also found that the severity of positive symptoms was associated with blood perfusion in some brain regions, which supports the hyperlimbic system and hypodopamine prefrontal cortex theories of schizophrenia. Research over the past decade has provided a wealth of evidence supporting schizophrenia as a brain disease [7]. The inhibition of schizophrenia disease may involve a variety of pathological mechanisms. The use of a single research method or possible biomarkers from a single system is ineffective. There are still large defects in clinical time conversion. The aim to find simple and clear biomarkers of schizophrenia still has a long way to go.

Schizophrenia has greatly impacted on society and people's health and lives, and there is still a lack of information about the effect of environmental factors on schizophrenia. This paper aims to investigate the impact of SES, by analyzing patients and their parents' property, education and class. Furthermore, it also analyzed research that explored the differences between urban patients and rural patients. This paper aims to examine the relationship between environment factors and the risk of developing schizophrenia.

It also pointed out the limitations of previous research. Understanding the environment factors can provide guidance in developing prevention and intervention programs for schizophrenia.

2 The Role of SES in the Risk of Schizophrenia

2.1 The General Contribution of SES to Schizophrenia

The external environment, such as job, economic status, education received, and relationships in interpersonal communication, etc., is inseparable from schizophrenia. Surveys show that the incidence of schizophrenia in the lower class is significantly higher than the wealthy class. Besides, the incidence of schizophrenia in low cultural groups is higher than the high cultural group. This shows that the onset of schizophrenia and economic conditions also have an internal correlation.

Studies have shown that schizophrenia is more class-specific, so it should be lower in developing countries. Although the course of schizophrenia varies significantly across cultures, cross-cultural research in psychiatry focuses more on similarities than differences [8]. Kleinman believes there is a strong bias in finding the prevalence of mental disorders. In an international pilot study of schizophrenia and the determinants of its prognosis, catatonia (a type of schizophrenia characterized by prolonged and fixed numbness) was diagnosed in 10% of cases in developing countries and less than 1% in developed countries. Adolescent dementia (a form of schizophrenia characterized by severe personality splits) accounts for 4% of all cases in both developed and developing countries [8]. These differences in the prevalence of the disease between developed and developing countries suggest that schizophrenia is more prevalent than simple epidemics. Better outcomes in developing countries may indicate different etiologies and permanent factors. Cohen believes the vast majority of cases are found in Western-style facilities, so the true number of cases of schizophrenia may be an underestimate [9]. He also points out that the proportion of people with acute onset schizophrenia is twice as high in developing countries as in developed countries. These differences may indicate that there are real differences in the collection of hospitalization data and cross-cultural manifestations of schizophrenia but have little to do with the true prevalence and incidence of schizophrenia.

Parental Socioeconomic status (PRS) and family history of mental illness are major components of social class analysis. In Esben et al.'s study, variables associated with schizophrenia (PRS and family history of mental illness) were evaluated in a large sample of schizophrenia cases in Denmark [10]. The results found that the polygenic risk score decile and the rate of schizophrenia remain at the same level from 0 to 2 but then ascend with a straight slope. In addition, family history of mental illness is a highly predictive factor of schizophrenia, i.e., genes.

Environmental factors—SES of parents is a major risk factor for this disorder. In Cheryl et al.'s study, the Cox proportional risk method was used to assess SES. Previous studies have suggested a possible causal relationship between social class and schizophrenia, leading to the social causality hypothesis [11]. Regardless of social class background, the age, race of individuals and parents were also found to be highly correlated with the disease. In Shirli et al.'s study, the relationship between individual

and community SES at birth, individual family history, stressors and schizophrenia was assessed through a large sample of cases in Israel [12]. Control variables included sex, birth, paternal age, and race. The data show that community environment is also an important factor. The educational level of parent accounts for a large proportion. The financial status of the family is another risk factor, while the impact of the community environment on the individual is an important factor in addition to congenital conditions. However, the economic status of parents affects the process of individuals remains to be studied, and the current conclusion can only be inferred that there is a direct relationship between the two. At the same time, Cheryl et al.'s study also looked at the occupation and age of parents, besides, the data clearly showed that place of birth and weight were not associated with future morbidity [11]. The relative risk of schizophrenia was increased for people of the lowest social status, as was fathers in lower occupational classes. Furthermore, accurate data suggest that this is an assumption that schizophrenia is not directly related to socioeconomic gradients and that this factor can only be used as a risk factor for schizophrenia [12]. Therefore, these three factors are only a small part of a larger synthesis. These papers use reliable data of SES to analyse the important contribution of three risk factors for schizophrenia [13].

2.2 The Protective Role of SES

Education, income, and occupational status are positively associated with disease identification and realistic estimates of lifetime prevalence of depression. Social status with higher education provides a modest protection against schizophrenia [14]. In addition, the SES factors of education, parental education, and income were more related to cognition in patients than in common people. In the study by Olaf et al., the relationship between education and schizophrenia were assessed using a telephone survey [15]. The paper focuses on depression, schizophrenia and eating disorders all taken together. The experiment used a random telephone interview to ask questions, and they were divided into educational level and occupational status. This is a novel experimental perspective.

At the same time, health education plays an important role in the prognosis of patients with schizophrenia in the future. It can be used as an adjunct to drug therapy to relieve symptoms, increase drug compliance, and thus reduce the risk of relapse. Schizophrenia patients with high education level have confidence in the self-management of the disease, their quality of life is good. As a result, the treatment direction should be based on different education levels of patients and focus on cultivating patients' ability to self management of the disease, so as to improve the quality of life of patients.

3 SES and Environmental Influences

3.1 The Impact of Living Environment on Schizophrenia

There was a critical positive connection between low income and risk of schizophrenia. For instance extreme importance nations portrayed by an enormous rich-poor gap might be at expanded hazard of schizophrenia. It illustrated that pay imbalance impacts contrarily on social cohesion, disintegrating social capital, and that persistent pressure related

with residing in exceptionally dissimilar social orders places people in risk of schizophrenia. In the study by Nagendra et al., long stretches of member schooling and different measurements (e.g., income) were surveyed involving diagram in an enormous example of non-Hispanic Black and non-Hispanic White Americans with schizophrenia-range sicknesses [1]. It was observed that being determined to have the incidence is connected to living in progressively low-pay regions. Black members lived in lower-pay communities than their White counterparts. Therefore, living climate extraordinarily impacts the rate of schizophrenia, individuals who live in less rich local area are more straightforward to have schizophrenia, especially individuals of color.

It is showed that individual-level and region level SESs were related with the incidence of schizophrenia. Region level SES is especially essential to psychological well-being of low SES people, with low SES individuals in high SES provinces having the most noteworthy incidence of schizophrenia than different districts. In the study by Luo et al., educational attainment and household income were assessed using a national sample survey in a large sample of 1.9 million Chinese adults from Second National Sample Survey on Disability [16]. It was found that compared with people without schizophrenia, fewer female, less urban and more single were in schizophrenia patients Area-level SES is especially vital to mental well-being of low SES people, with low SES individuals in high SES districts having the highest risk of schizophrenia than other bunches. Additionally, activity to decrease SES incongruities in schizophrenia will require consideration to the area-level setting low SES grown-ups. Taking everything into account, people in all actuality do profit from the equality of assets and knowledge for the most part connected with SES regions. Diminishing SES inconsistencies in schizophrenia will expect thoughtfulness regarding the region level setting of low SES adults.

3.2 The Effects of SES on Accessibility to Relevant Resources

It was found that risk of schizophrenia expanded with an aggregation of antagonistic social variables, like joblessness, “unclassified” business, receipt of social government assistance and single-parent families. Guardians of youngsters with schizophrenia were bound to be jobless or in the most minimal quartile for money in the year preceding confirmation of their kid. One expected mechanism for expanded hazard of schizophrenia among the most minimal social classes is misfortune. It can increment maternal pressure with possible consequences for the fetus. Additionally increment responsibility for later ways of behaving in posterity. For example, drug use, which might increment risk for schizophrenia [12]. In the study by Czepielewski et al., cognition, education, parents’ years of education, and family income were evaluated using chart in a large sample of participants from five Latin American countries It was found that in any case, they were most affected by a lower SES suggestive of denied environment than common people [17]. These discoveries highlight the powerlessness of cognitive capacity in people with psychosis in confront of statistic and financial components in low--income and middle-income nations. In addition, the SES factors of education, parental education, and income were more related to cognition in patients than in common people. Thus, the incidence of schizophrenia has more relationship with parents’ years of education and salary.

It was illustrated that patients' absence of motivations, negative discernment toward treatment and monetary assets fundamentally matters a great deal in the treatment of schizophrenia messes. At the point when the patient doesn't have confidence in treatment, he/she maintains a strategic distance from prescriptions and even some of the time patient skips prescription or postponed time stretch deliberately, because they see the prescription is useless. Some of the time patients stay away from or skip prescription because of more side effects of the prescription. Patients' positive discernment, inspiration, and having better monetary assets produce better treatment results. In the study by Abbas, et al., patients' level of motivation and perception about treatment and monthly income were assessed using PANS scale in a large sample of patients. It was found that financial resources significantly does matter a lot in the treatment of patients who are lack of motivations, negative perception toward treatment. Patients with high income assets can afford superior treatment opportunities (e.g., best specialists and bear medication expenses), and approach professional on the right time while patients with low-income assets may delay of treatment, because they must manage their assets. Additionally, a need of treatment facilities and support system which moreover causes of severity in patients. As a result, the salary of patients has an impact on the cognition of schizophrenia and the quality of treatment. Furthermore, in low-pay nations local-area based restoration can assist with the recuperation of individuals with schizophrenia, when conveyed close by prescription from a neighborhood well-being focus. As people group-based restoration can be conveyed by laypeople, these discoveries are especially significant for where there are not many psychological well-being experts [18].

4 Conclusion

In this paper, the connection between SES and schizophrenia was discussed in four parts: the general contribution of SES to schizophrenia, the protective role of SES, the impact of living environment on schizophrenia, and the effects of SES on accessibility to relevant resources. SES serves as a probable risk factor in schizophrenia, rather than playing a determinant role. It was illustrated that being diagnosed with schizophrenia disorders was linked to living in relatively low-income areas. The SES factors of patients' education level, parental education level, and income were more related to cognitive performance of patients compared with typically developing people. Previous studies show that the rate of schizophrenia in the lower SES class is altogether higher than the higher SES class. Plus, the rate of schizophrenia in low SES social gatherings was higher than the high SES social gatherings. Moreover, living environment commonly impacts the risk of schizophrenia. People who live in poorer neighbourhood are at a higher risk to be diagnosed with schizophrenia, especially for people who live in severe poverty. The income of patients affects the prognosis of schizophrenia and the nature of treatment as well. In addition, health education plays a significant role in the treatment of patients with schizophrenia later. Plus, the incidence of schizophrenia was related to parental years of education and wages.

However, the conclusion regarding the relationship between SES and risk of schizophrenia was resulted from previous studies that mainly used questionnaires. Only correlational rather than causal relationships can be interpreted. Future study can exam

the long-term relationship between SES and schizophrenia through conducting longitudinal studies. The review established the association between SES and risk of schizophrenia. It can provide practical guidance to the design of prevention and intervention family programs for populations that have a high risk of schizophrenia.

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