# The Influence of Social Support on Cognitive Function of Schizophrenic Patients

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Abstract: With the continuous development of information technology in China, more and more attention has been paid to effective informatization. Information transmission is not only endowed with the function of communication, but also expected to improve life satisfaction and happiness, which is conducive to the diversity and effectiveness of the treatment of various diseases including schizophrenia. Cognitive function is an important condition for us to perceive external information and adapt to the objective environment. The cognitive function of schizophrenic patients has always been an important embodiment of their quality of life and information fluency. Therefore, the influencing factors of their cognitive function, such as social support, have received extensive attention from researchers. In order to investigate the effect of social support on the cognitive function of schizophrenia patients, 235 inpatients with schizophrenia in Nanchang were investigated with RBANS and Social Support scale. The results showed that social support had a certain influence on the cognitive function of patients with schizophrenia, and the better the social support was, the better the cognitive function was. Social support and cognitive function of schizophrenia patients have different dimensions of influence. Overall social support was positively correlated with immediate memory and delayed memory (P< 0.01). The conclusions are as follows: Conclusion Social support has a certain effect on the cognitive function of patients with schizophrenia, and these effects have a certain significance for the treatment of cognitive function of patients with schizophrenia.

## 1 INTRODUCTION

Cognitive function is one of the important functions of the human brain, and is also an important condition for people to perceive the world and adapt to the objective environment. Studies have shown that the influencing factors of cognitive function include age, age of first onset, cognitive bias, emotional cognition, loneliness, family environment, social support, coping style and other physiological, psychological and social factors (Xue et al 2019). In addition, a number of studies have shown that social support has an important impact on cognitive function. For example, social support has a positive correlation with the cognitive function of the elderly. The more perfect the social support network is, the more it can alleviate the cognitive impairment of the elderly, and the more perfect their cognitive function will be (Mo et al 2014, Zhao &YU 2016). Therefore, social support has an important influence on cognitive function.

Schizophrenia is a major mental disease mainly characterized by positive symptoms, negative symptoms and cognitive dysfunction, among which cognitive dysfunction was first proposed by Gallhofer in the early 1970s, pointing out that cognitive dysfunction is the third core symptom along with positive and negative symptoms (Gallhofer et al 1996). Cognitive function plays a very important role in our adaptation to life. Generally, schizophrenia patients have different degrees of cognitive impairment, and the quality of cognitive function is closely related to the integration of schizophrenia patients into social life (Geng &Liu & Zhang 2019). Therefore, intervention for patients with cognitive impairment has become an important aspect of prevention and treatment, and the restoration of cognitive function has become one of the treatment goals of patients with schizophrenia. Modern rehabilitation medicine is also focusing on the study of cognitive impairment (Liu 2019).

At present, most of the effects on the cognitive function of schizophrenia patients are mostly focused on drug research. For example, Hu Yi et al. concluded in 2021 that Shugan granules or aripiprazole treatment can effectively improve women's first-episode schizophrenia. Causes the cognitive function of patients with hyperprolactinemia, and Shugan Granules are better than aripiprazole in improving cognitive function (Hu et al 2016). Part of the research focuses on physiological factors such as age, education level, age of first onset, length of disease, genetic factors and so on. However, there is little research on the impact of social support on the cognitive function of patients with schizophrenia, and the influencing factors are analyzed from the perspective of biology and medicine (Wang 2019).

In China, the main treatment for schizophrenia patients is hospitalization and drug therapy. Due to the particularity of the inpatient treatment environment, it is difficult for patients with schizophrenia to communicate fluently with the outside world except for medical staff and visitors, which has certain similarities with empty-nesters and has certain limitations of information exchange. At the same time, in the social support theory and Maslow's hierarchy of needs theory, social support plays an indispensable positive role in the improvement of individual cognitive function. Therefore, it is necessary to explore the influence of social support on the cognitive function of schizophrenia patients from the psychological perspective.

## 2 RESEARCH STATUS

Cognitive function is closely related to social support, age, gender, education level and other factors. Some scholars have concluded from the influence of the cognitive function of the elderly in the community that with the growth of age, the protective effect of social support on the cognitive function of the elderly is more and more important, and put forward suggestions such as community and children should accompany the elderly and improve the recreational facilities for the elderly in the community (CAI et al 2011). Jiao Can, Yin Fei, Shen Xiaofang and Huang Yufu concluded in 2020 that social support is significantly correlated with the cognitive function of the elderly, and the higher the level of social support, the lower the incidence of cognitive impairment, and the higher the level of social support, the lower the loneliness and depression (Jiao et al 2020). Fan Shuming, Wang Yixin and Jiao Can concluded in

2021 that the perceived social support of "elderly drifters" can protect cognitive function by reducing loneliness, and this process is regulated by psychological resilience (Fan et al 2016). In the interactive model of schizophrenia, social support is assumed to be a protective factor contributing to coping and competence, thus moderating the harmful effects of social and environmental stressors (Yuan et al 2019). In addition, Chen Liping showed in her study on the influence of cognitive function on patients with chronic schizophrenia in 2020 that comprehensive nursing with increased social support plays a role in promoting the improvement of cognitive function of patients with schizophrenia (Chen 2020). It also indicates that social support is very important to explore the influencing factors of cognitive function in schizophrenia patients. On the whole, in recent years, studies on the impact of social support on cognitive function have been analyzed from the perspective of psychology. Most of the research objects are the elderly, while there are few studies on the impact of social support on the cognitive function of patients with schizophrenia (Zhou 2017, Zhang 2018).

The concept of social support originates from Bowby's attachment theory, and began to be used in the clinical treatment of psychiatry in the 1960s. By the 1970s and 1980s, the Application of social support was promoted to various aspects in the United States. According to the different nature of the resources provided by social support, foreign scholars divide it into four categories: emotional support, information support, friendship support and instrumental support. After years of transnational collaborative research, some foreign mental health experts believe that the maintenance and consolidation of social support network is most directly related to mental health and quality of life (Chen 2019).

Research on the cognitive function of schizophrenia abroad has been earlier and has yielded certain results. For example, Owen, Sawa and Mortensen proposed in the study of schizophrenia in 2016 that the cognitive syndrome of schizophrenia originates from the combined effect of genetics and environment (Owen, Sawa & Mortensen 2016). Some scholars have found that zotipine and clozapine have different effects on the cognitive function of patients with schizophrenia (Gallhofer et al 1996). In addition, foreign scholars have discussed the influence of social psychology on cognitive function in the study of schizophrenia's motivation and the relationship between neurocognition, social cognition and functional outcome (Melissa et al

2009). Generally speaking, people's understanding of social support and cognitive function is diverse, but from the perspective of social support, there are few studies on the cognitive function of patients with schizophrenia (Zuo &Jiang 2010, Zhang et al 2020).

## 3 RESEARCH DESIGN

The purpose of this article is to explore the impact of social support on the cognitive function and different dimensions of patients with schizophrenia. The tools used self-compiled general survey questionnaire, Xiao Shuiyuan's 1986 version of the "Social Support Rating Scale", and a set of repetitive neuropsychological status test (RBANS scale) (Chen 2017). Methods A random sampling method was used to issue questionnaires to inpatients in Nanchang Mental Hospital. A total of 235 questionnaires were returned, of which 204 were valid questionnaires. The effective response rate of the questionnaire was 87%. The detailed distribution is shown in the table below.

Table 1: Distribution of subjects.

| variable | type | the number of | percentage |
|---|---|---|---|
| gender | male | 112 | 54.90% |
| | female | 92 | 45.10% |

It can be seen from the above table that there are 112 males, accounting for 54.9% of the subjects, and 92 females, accounting for 45.1%.

## 4 RESEARCH RESULTS AND ANALYSIS

### 4.1 The General State of Social Support in Schizophrenic Patient

Table 2: Social support description statistics.

| | Min | Max | M±SD |
|---|---|---|---|
| Subjective support | 8 | 31 | 19.58±4.69 |
| Objective to support | 1 | 20 | 8.75±4.28 |
| Utilization of support | 3 | 12 | 7.11±2.36 |
| Social support | 16 | 59 | 35.45±8.38 |

As can be seen from the above table, the score of subjective support is 19.58, the score of objective support is 8.75, the score of the utilization of support is 7.11, and the total score of social support is 35.45, which is between 32 and 44, indicating the middle and low level of support.

### 4.2 Gender Difference Test of Social Support for Schizophrenic Patients

Table 3: Gender difference analysis.

| project | male M±SD | female M±SD | T |
|---|---|---|---|
| Subjective support | 19.63± 4.792 | 19.75± 4.60 | 0.154 |
| Objective to support | 8.19± 4.162 | 9.44± 4.35 | - 2.088* |
| Utilization of support | 6.48± 2.43 | 7.88± 2.026 | - 4.393* ** |
| Total Score for Social Support | 34.311± 8.596 | 36.85± 7.95 | - 2.176* |

Note: *p<0.05,***p<0.001

As can be seen from the above table, in the social support scale and various dimensions of social support, there is an extremely significant difference between male and female subjects in the use of support (T=-4.393, P < 0.001), and the score of female is higher than that of male. This shows that in terms of the use of support, women are more likely to use support. At the same time, there were significant differences in the total scores of objective support and social support between male and female (T1=2.088, T2=-2.176, P < 0.05), and the scores of female were higher than that of male. It shows that women are more likely to receive social support. The other items showed no significant difference in gender (P < 0.05). To sum up, it can be inferred that the main source of gender differences in social support is the difference in the use of support.

### 4.3 The Influence of Social Support on Different Dimensions of Cognitive Function in Patients with Schizophrenia

As can be seen from the above table, there is a significant positive correlation between subjective support and immediate memory and delayed memory. There is a significant positive correlation between objective support dimension, attention dimension, delayed memory dimension and RBANS total score. There is a significant positive correlation between the utilization of support and immediate memory. There was a significant positive correlation between overall social support and immediate memory and delayed memory.

Table 4: Correlation matrix between social support and cognitive function of schizophrenic patients.

| | Subjective support | Objective to support | Utilization of support | Social support |
|---|---|---|---|---|
| Immediate memory | 0.257** | 0.116 | 0.262** | 0.277** |
| The visual span | -0.072 | 0.051 | 0.021 | -0.009 |
| Speech function | 0.082 | 0.077 | -0.005 | 0.084 |
| Attention | 0 | 0.187** | 0.115 | 0.128 |
| Delayed memory | 0.173* | 0.175** | 0.132 | 0.223* |
| RBAN total score | 0.044 | 0.151* | 0.096 | 0.129 |

Note:*$p<0.05$,***$p<0.001$

## 5  DISCUSS

The results of the correlation analysis data of social support and cognitive function of patients with schizophrenia show that there is a significant influence between the subjective support dimension and the two dimensions of immediate memory and delayed memory. Subjective support refers to emotional support. The higher the individual's subjective support, the better the individual's subjective feelings, the more calm and normal the mood, and the less affected by bad emotions. Furthermore, when patients with schizophrenia perform memory cognitive functions, they will have a better effect. Good, for example, immediate memory and delayed memory are better for the patient. There is a significant influence between the dimension of objective support and the two dimensions of attention and delayed memory. Objective support refers to objective and actual support. The higher the objective support, the more material support the patient usually receives, which will affect the patient's focus on the real material world. According to Maslow's hierarchy of needs theory, when the physiological needs are met, they will focus on belonging and love The need to focus on the communication itself. If the patient's family brings an apple to the patient, the patient is more likely to notice the apple brought by the family member first, and does not pay much attention to the content of the conversation itself. When the apple is eaten, the attention gathers to the communication itself, and the family mentions it again. Patients will re-recognize the topic of memory, therefore, the higher the objective support, the better the performance of attention and delayed memory. It has a significant impact on the two dimensions of support utilization and immediate memory. Human support is a process of mutual support. The higher the utilization of support, the more relevant information can be obtained through the support network, and the better the immediate memory effect. The two dimensions of overall social support and immediate memory and delayed memory have a significant impact. The higher the overall social support, the patient will feel that he has not been abandoned by his family and the outside world, the patient's stigma will be reduced, the self-efficacy will be improved, the need for belonging and love will be met, the cognitive function of the brain will continue to be strengthened, and therefore immediate memory And the delayed memory dimension project performed well.

## 6  CONCLUSIONS

Social support has a certain influence on the cognitive function of schizophrenia patients, the better social support, the more perfect their cognitive function. The effects of social support on the cognitive function of schizophrenic patients were different: there was a significant positive correlation between overall social support and immediate memory and delayed memory (P< 0.01); Subjective support dimensions and immediate memory (P<0.01),delayed memory (P< 0.05) there is a significant positive correlation between the two dimensions; Objective support dimensions and attention (P< 0.01), delayed memory (P<0.05), RBANS (P< 0.05) were significantly positively correlated; There was a significant positive correlation between the utilization of support and immediate memory (P< 0.01).

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