

# Multiple Factor Analysis of Neuropsychology in Elderly Patients with Depression

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## Abstract

**Objectives:** To explore the multiple factors of neuropsychology in elderly patients with depression. **Methods:** 64 elderly patients with depression were selected as individuals. The Geriatric Depression Scale (GDS), neuropsychological scale score, and family support scale were used to analyze multiple factors of neuropsychology in elderly patients with depression. **Results:** Through GDS, neuropsychological scale, and family support scale, we can see that there is cognitive impairment in elderly patients with depression. It is closely related to the following three factors: the economic capacity of the family, their health status, and family support level. These factors play an important role in the depression of the elderly and are the main causes of depression in the elderly. **Conclusions:** There are many neuropsychological factors affecting depression in the elderly. In the prevention of the occurrence of depression in the elderly, the prevention of physical diseases should be done in time, and the harmonious family relationship should be maintained. At the same time, the economic situation of elderly families should be improved.

**Keywords:** Geriatric Depression Scale, harmonious family, neuropsychology, physical diseases

## INTRODUCTION

As China enters an aging society, the problem of the elderly is a more prominent issue.<sup>[1]</sup> It is estimated that the elderly population will increase to 306 million in 2040,<sup>[2]</sup> accounting for about 23% of the total population, reaching the peak of aging.<sup>[3]</sup> By the middle of this century, one in every three Chinese people is the elderly. Depression is a common mental abnormality in the elderly, often manifested as depressed mood,<sup>[4]</sup> loneliness, mental retardation, mental retardation, and suspicious sensitivity.<sup>[5]</sup> This often causes elderly people to worry about them, causing insomnia, loss of appetite, and weight loss. It is extremely detrimental to the physical and mental health of the elderly.<sup>[6]</sup> This article uses a standardized psychological measurement tool to explore 64 cases of depression in the elderly as a research subject-related factors of depression and its analysis.

## Overview

Sixty-four elderly patients with depression were selected as participants. The Geriatric Depression Scale (GDS), neuropsychological scale score, and family support scale were used to analyze multiple factors of neuropsychology in elderly patients with depression.

GDS is shown in Figure 1.

## METHODS

### Research methods

The self-assessment questionnaire was used to survey the questionnaire including the patient's general condition questionnaire and the National GDS neuropsychological scale and family support scores GDS scale with the national norm reliability and validity. The Depression Scale has been created and standardized by the elderly. The scale has 30 items; normal scores are 10 points or less, mild depression is 11–20 points, and moderate to severe depression is 21–30. Family Support Scale A total of 10 items, including objective support, subjective support, and supportive use of three aspects, a total of 10.

### Statistical processing

All questionnaires were input into Shanghai Huazhong

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Patient \_\_\_\_\_ Examiner \_\_\_\_\_ Date \_\_\_\_\_

**Directions to Patient:** Please choose the best answer for how you have felt over the past week.

**Directions to Examiner:** Present questions VERBALLY. Circle answer given by patient. Do not show to patient.

1. Are you basically satisfied with your life? .....	yes	<b>no (1)</b>
2. Have you dropped many of your activities and interests? .....	<b>yes (1)</b>	no
3. Do you feel that your life is empty? .....	<b>yes (1)</b>	no
4. Do you often get bored? .....	<b>yes (1)</b>	no
5. Are you hopeful about the future? .....	yes	<b>no (1)</b>
6. Are you bothered by thoughts you can't get out of your head? .....	<b>yes (1)</b>	no
7. Are you in good spirits most of the time? .....	yes	<b>no (1)</b>
8. Are you afraid that something bad is going to happen to you? .....	<b>yes (1)</b>	no
9. Do you feel happy most of the time? .....	yes	<b>no (1)</b>
10. Do you often feel helpless? .....	<b>yes (1)</b>	no
11. Do you often get restless and fidgety? .....	<b>yes (1)</b>	no
12. Do you prefer to stay at home rather than go out and do things? .....	<b>yes (1)</b>	no
13. Do you frequently worry about the future? .....	<b>yes (1)</b>	no
14. Do you feel you have more problems with memory than most? .....	<b>yes (1)</b>	no
15. Do you think it is wonderful to be alive now? .....	yes	<b>no (1)</b>
16. Do you feel downhearted and blue? .....	<b>yes (1)</b>	no
17. Do you feel pretty worthless the way you are now? .....	<b>yes (1)</b>	no
18. Do you worry a lot about the past? .....	<b>yes (1)</b>	no
19. Do you find life very exciting? .....	yes	<b>no (1)</b>
20. Is it hard for you to get started on new projects? .....	<b>yes (1)</b>	no
21. Do you feel full of energy? .....	yes	<b>no (1)</b>
22. Do you feel that your situation is hopeless? .....	<b>yes (1)</b>	no
23. Do you think that most people are better off than you are? .....	<b>yes (1)</b>	no
24. Do you frequently get upset over little things? .....	<b>yes (1)</b>	no
25. Do you frequently feel like crying? .....	<b>yes (1)</b>	no
26. Do you have trouble concentrating? .....	<b>yes (1)</b>	no
27. Do you enjoy getting up in the morning? .....	yes	<b>no (1)</b>
28. Do you prefer to avoid social occasions? .....	<b>yes (1)</b>	no
29. Is it easy for you to make decisions? .....	yes	<b>no (1)</b>
30. Is your mind as clear as it used to be? .....	yes	<b>no (1)</b>

**TOTAL:** Please sum all bolded answers (worth one point) for a total score. \_\_\_\_\_

**Scores:**                    **0 - 9 Normal**    **10 - 19 Mild Depressive**    **20 - 30 Severe Depressive**

Source: www.stanford.edu/~ yesavage

Source: Dermatol Nurs © 2002 Jannetti Publications, Inc.

Figure 1: Geriatric depression scale

Computer Software Development CO., LTD. China, and standard points and factor scores were counted. The results were analyzed by SPSS 11.5 software - statistical analysis in social science; IBM Corporation; Statistical analysis, data mining, text analytics, data collection for descriptive analysis, single factor X-test, and multifactor unconditional logistic regression analysis.

## RESULTS

### The prevalence of depression in elderly in-patients

The incidence of depression in 64 elderly inpatients accounted for 24%. Among them, mild depression accounts for 21%. Moderate and severe depression accounts for 3%.

### The single factor analysis related to the occurrence of depression in the elderly

As shown in Table 1, there is no statistically significant difference in the incidence of depression in elderly inpatients of different ages and economic status ( $P > 0.05$ ) and gender,

marital status, negative life events, and self-evaluation of health. There was a statistically significant difference in the incidence of depression among elderly inpatients ( $P < 0.01$ ). In comparison, the incidence of depressive symptoms in older hospitalized women was higher than that in men; the proportion of depressive symptoms in older individuals was higher than that in married elderly; depressive symptoms in elderly people with negative life events are higher than those in elderly people with negative life events. The proportion of elderly patients with poor self-assessment of poor health and poor depressive symptoms is significantly higher than self-assessment. Health is good, good and general Patient.

### Multivariate analysis of the incidence of depression in the elderly

To explore the main factors affecting depression in elderly inpatients, whether the occurrence of depression is the dependent variable (0 no depression, one occurrence of depression), to the patient's gender, age, marital status, economic status, negative life events, health Self-evaluation, total social

support, objective support, subjective support, supportive use, problem-solving, self-accusation, help-seeking, fantasy, retreat, and rationalization are independent variables. Unconditional logistic regression analysis of factors ( $\alpha = 0.05$ ). The results are shown in Table 2.

From Table 2, we can see that the factors that enter the regression equation include eight variables: gender, negative life events, subjective support, supportive use, problem-solving, self-blame tendencies, help-seeking tendencies, and fantasy tendencies. The incidence of depression in elderly inpatients has a greater impact, and similar results are shown in Table 1. From a gender perspective, the incidence of depressive symptoms in older women is 3.094 times that of male patients; from negative life events, the occurrence of depressive symptoms in elderly patients with negative life events is 3.27 times that of elderly patients without negative life events. From the perspective of subjective support, use of support, problem-solving, and seeking help, the lower the score, the more likely it is to develop depression. From the perspective of guilt and illusion, the higher the score, the more prone to depression.

## CONCLUSIONS

A large number of studies at home and abroad show that normal people have different degrees of depressive symptoms, Zhang

**Table 1: A comparative study of depressive status among 64 inpatients with different characteristics (%)**

Factor	Depression			
	Groups	Occurrence rate	$I^2$	$P$
Gender	Male	15.6	21.025	0.000
	Female	35.4		
Age	60-69	25.4	0.417	0.821
	70-79	24.4		
	80-89	21.3		
Marital status	Married	21.8	6.318	0.012
	Widowed	35.5		
Economic situation	1000	32.6	3.984	0.136
	1000-2000	21.9		
	2000-3000	22.4		
Negative life events	Have	41	24.810	0.000
	No	17.5		
Self-health assessment	Good	12.5	16.234	0.003
	General	11.3		
	Poor	21.4		

**Table 2: Multifactor nonconditional logistic regression analysis of depression affecting elderly inpatients**

Variable	Regression coefficients	$P$	OR	95% CI
Gender: Female	1.129	0	3.094	1.892-5.059
Negative life events: Yes	1.185	0	3.270	2.026-5.275
Subjective support	-0.074	0.016	0.929	0.874-0.987

CI: Confidence interval, OR: Odds ratio

Mingyuan *et al.* reported that the incidence of depressive symptoms in the normal population in the country was between 15.1% and 22.5%; Comstock *et al.*'s survey of 1672 residents in Washington and 1173 residents in Kansas City showed that the incidence of depressive symptoms was 18% and 20%, respectively. According to foreign data, the incidence of depression in elderly inpatients was 11%–25%, which is close to the results of this study and higher than that of the normal population. It is suggested that depressive symptoms are a common negative emotion in hospitalized elderly patients and should be highly valued by medical staff. In the general condition of patients, the occurrence of depression is related to gender. However, when analyzing other reasons, there is no significant difference in economic status. It is believed that the income gap between residents of the survey is small and that there is less income. Families with higher income may have better living conditions; to a certain extent, this alleviates the psychological pressure of the elderly.

Life events and physical diseases are often the important predisposing factors of depression in old age. There is a dose–response relationship between negative life events and senile depression. Negative life events may be important and valuable for senile depression. From the results of this survey, the incidence of depression in the elderly has increased with the increase in the frequency of life events. This shows that the elderly are the most vulnerable groups in the society, and the elderly are also many negative. During the period of life event concentration, various negative life events brought many stress to the elderly. Although the old age of chlorine has rich experience and strong psychological endurance, due to the aging of its psychological function, psychological defense, and psychological adaptability are poor, so negative. The stimuli of life events for the elderly are heavy and strong and often touch deep inside, leading to the occurrence of depression in the elderly.

There are many neuropsychological factors affecting depression in the elderly. In the prevention of the occurrence of depression in the elderly, the prevention of physical diseases should be done on time and the harmonious family relationship should be maintained. At the same time, the economic situation of elderly families should be improved.

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## Conflicts of interest

There are no conflicts of interest.

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