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Original Article

The effect of a psychological nursing intervention program based on the "Timing it Right" (TIR) framework on elderly patients' anxiety, psychology, and self-efficacy

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Abstract: Objective: To investigate the occurrence of anxiety and depression in elderly patients and to explore the effect of a psychological nursing intervention program based on the "Timing it Right" framework on the anxiety, depression, and self-efficacy among elderly patients. Methods: 135 elderly patients admitted to our hospital were divided into two groups. The 69 patients in the experimental group underwent systematic psychological intervention, and the 66 patients in the control group were given only general psychological support. The Hospital Anxiety and Depression Scale (HADS) and the General Self Efficacy Scale (GSEs) scores were used to assess the effect of the psychological intervention program on the elderly patients. Results: The psychological nursing intervention effect of the two groups after the intervention was improved compared with before the intervention ($P < 0.05$), and the Hospital Anxiety and Depression Scale (HADS) scores were lower in the experimental group than they were in the control group after the psychological intervention. The general self-efficacy scale scores of the experimental group were significantly improved after the intervention, and the scores in the experimental group were much higher than the scores in the control group after the intervention ($P < 0.05$). Conclusion: The incidences of anxiety and depression were higher in the elderly patients, and a psychological intervention program based on the "Timing it Right" framework can effectively reduce the negative emotions of anxiety and depression, and enhance the sense of self-efficacy.

Keywords: Psychological nursing intervention program, "Timing it Right", anxiety, self-efficacy, elderly patients

Introduction

With the growing of the aging of the population in China, the mental disorders of elderly patients have attracted more and more attention. Anxiety and depression are the most common mental disorders in the elderly, conditions characterized by slow thinking, low moods, thinking content disorders, physical discomfort, and sleep disorders [1, 2]. Anxiety and depression have a serious effect on the quality of life of the elderly and the treatment of other diseases they suffer from [3]. Other studies have found that there is a negative correlation between cognitive function and anxiety and the depression levels in elderly patients, that is, the more serious the anxiety and depression, the worse the cognitive function [4-6].

At present, the treatment of anxiety and depression in elderly patients includes psychotherapy, drug therapy and so on. But on the one hand, because of the uncertainty of the effectiveness and safety of the anti-anxiety and depression drugs for the elderly, some elderly people refuse to undergo drug treatment [7, 8]. Therefore, in clinical practice, it is suggested to choose psychological intervention to treat the elderly with anxiety and depression. In our study, we investigated the occurrence of anxiety and depression in elderly patients, and we explored the effect of the psychological nursing

intervention program based on the "Timing it Right" framework on their anxiety, depression and self-efficacy among elderly patients.

Data and methods

Clinical data

135 elderly patients suffering from anxiety admitted to our hospital from January 2019 to December 2020 and who met the inclusion and exclusion criteria were randomized and allocated into two groups: the experimental group (n=69) and the control group (n=66). The researchers systematically explained the role, purpose and process of the study to the patients and their families. The patients and their families voluntarily signed the informed consent form to participate in this study. This study was approved and recognized by the ethics committee of our hospital.

Inclusion and exclusion standards

Inclusive criteria: ① Patients who met the diagnostic standard for anxiety [9]. Patients whose General Hospital Anxiety and Depression Scale (HADS) scores were positive. ② Patients who were clear-minded and without hearing problems or mental retardation. They were able to read and understand the questionnaires. ③ Patients 60-85 years old. ④ Stay in hospital ≤7 days; ⑤ No history of mental illness; ⑥ Patients who were willing to cooperate with and help implement the experiment.

Exclusion criteria: ① Patients with serious cardiac disorders, severe liver malfunction, or renal failure. ② Women who were pregnant or breastfeeding. ③ Patients with a severe suicidal tendency or depression. ④ Patients who were unwilling to participate in our research.

Methods

The Control group (CG): The subjects were only treated with general psychological support. The effect was evaluated after 2 weeks of intervention.

The experimental group (EG): The subjects were treated with systematic psychological intervention. This consists of the following steps: ① The establishment of a psychological nursing team: Two nurses were selected from each of the five departments. The researchers conducted unified training on the relevant knowledge, including systematic psychological nursing standards, specific measures, relevant knowledge of self-efficacy theory, questionnaire filling methods and precautions, etc. Then the psychological nursing group members were given psychological nursing for 2 weeks. ② Establish a good nurse patient relationship: The First day: the nurses introduced themselves to the patients and communicated with the patients in a targeted way. The patients' subjective psychological feelings, their understanding of the disease diagnosis and treatment, their prognostic expectations and treatment confidence were perceived at the same time. The necessary life care and basic nursing were administered according to the actual situations of the various patients. ③ Professional psychotherapy: Days 2-6: the nurses taught the patients how to perceive anxiety and depression and told them the harm anxiety and depression cause to disease recovery and health, and a positive coping style can reduce anxiety and depression. According to the occupations, education levels, and the severity of the anxiety and depression of the patients, they administered different relaxation therapies. For patients with a low degree of anxiety and depression, they taught them abdominal deep breathing training. For the patients with a severe degree of education, they taught them whole body muscle gradual relaxation training and play calming, relaxing or cheerful music, once a day, for 30 minutes each time. For patients with severe anxiety and depression, they appropriately increased the frequency and times. ④ Enhance self-efficacy: Days 7-9: according to the evaluation results of the General Self-Efficacy Scale (GSEs), the patients were administered self-efficacy training. It mainly included: 1) The dissemination of theoretical knowledge: explaining the cause of the disease, clinical manifestations, treatment, diet, prevention, and risk factors to patients in a planned way. 2) Group discussion: arranging the patients with the same disease to communicate together, in particular, to let the patients with better recoveries describe their own experiences, introduce the experience of overcoming the disease, and help the other patients restore their confidence. 3) Attach importance to family and social support: strengthen the communication with the family members, and

Table 1. Comparison of the clinical data between the two groups

	Experimental group (n=69)	Control group (n=66)	t/χ^2	*P*
Age (years)	74.05±6.91	71.35±7.09	3.25	0.24
Sex			3.28	0.42
Male (n%)	42 (60.9%)	46 (69.7%)		
Female (n%)	27 (39.1%)	20 (30.3%)		
BMI	17.05±1.28	17.65±1.06	5.29	0.28
Smoking	37 (53.6%)	39 (59.1%)	1.96	0.69
Marital status			17.83	0.24
Married	23 (33.3%)	19 (28.8%)		
Single	16 (23.2%)	12 (18.2%)		
Divorced or separated	20 (29%)	16 (24.2%)		
Widowed	8 (11.6%)	15 (22.7%)		
Unknown/missing	2 (2.9%)	4 (6.1%)		
Had a past medical history	26 (37.7%)	24 (36.4%)	2.13	0.74

Note: Compared with the control group, a significant difference is $P < 0.05$.

inform the family members that the support of relatives and friends has a positive effect on reducing the anxiety and depression of the patients and promoting the recovery of the disease. 4) Avoid negative agitation: try to make the patients avoid learning any information about negative events, especially information about the deterioration or death of other patients with the same disease. ⑤ Group psychotherapy: Days 10-14: the stable patients were organized in the sunshine activity room of the corresponding ward for 1 hour in the afternoon for collective activities: the patients were organized to tell stories, play chess, play cards, play Taijiquan and other activities, especially the patients with low participation were actively mobilized, so that they could fully integrate into the activity room, so as to train the patients that they have different interests. The effect was evaluated after 2 weeks of intervention.

Evaluation standard of the clinical therapeutic effect

① Hospital Anxiety and depression scale (HADS) [10]: HADS consists of 14 items, including two subscales of anxiety and depression, with 7 items in each section. Each item is scored from 0-3 points, and the total possible score ranges from 0 to 21 points. 0-7 is asymptomatic, 8-10 is possible, and 11-21 is certain. The score starts with 8 points, that is, both the suspicious and symptomatic patients are positive. ② General self-efficacy scale (GSEs) [11]: The GSE contains 10 items, the answers are divided into four grades, the scores range from 1-4 points, the total possible score is 40 points, and the results are divided into "very low, low, high, very high" four grades, and the higher the score, the higher the level of self-efficacy. The internal consistency reliability is 0.75-0.91, and it has good reliability and validity.

Statistical analysis

All the data were analyzed using SPSS software (version 22.0; SPSS Inc). The statistical results are expressed as the mean ± standard deviation ($\bar{x} \pm s$), the data comparison were done using t-tests, and the correlation analysis were done using Pearson's linear phase, and $P < 0.05$ was considered statistically significant. GraphPad Prism (GraphPad Software Inc., CA, USA) was used to draw the figures.

Results

Clinical data

Table 1 shows the characteristics of the participants. The research included 135 patients, including 69 patients in the experimental group with a mean age of (74.05±6.91) years, and in the control group a mean age of (71.35±7.09) years. The BMI in the experimental group was (17.05±1.28) kg/m^2, and in the control group it was (17.65±1.06) kg/m^2. There were no significant differences between the two groups (P= 0.28). The marital status had five possibilities: married, single, divorced, separated, and unknown/missing. The number of married elderly patients was 23 (33.3%) in the experimental group, and in the control group there were 19 (28.8%). The number of single elderly patients in the experimental group was 16 (23.2%), and in the control group it was 12 (18.2%). The rate of divorced or separated in the experimental group was 29% (20/69), and in the control group it was 24.2% (16/66). The rate of widowed elderly patients in the experimental group was 11.6% (8/69), and in the control group it was 22.7% (15/66). And there were no statisti-

Table 2. Comparison of the Hospital Anxiety and Depression Scale (HADs) scores between the two groups after the intervention (points, $\bar{x} \pm s$)

	time	Experimental group (n=69)	Control group (n=66)	t	*P*
Anxiety	Before intervention	10.37±2.10	10.19±2.01	0.52	0.096
	After intervention	5.63±2.35	9.09±2.42	5.78	0.0007
	t	24.9	5.78	-	-
	P	0.000	0.02	-	-
Depression	Before intervention	10.67±2.37	10.31±2.09	0.54	0.27
	After intervention	6.31±2.89	9.39±2.32	6.32	0.0005
	t	16.91	7.15	-	-
	P	0.0001	0.0002	-	-

Note: Compared with the control group, a significant difference is P < 0.05.

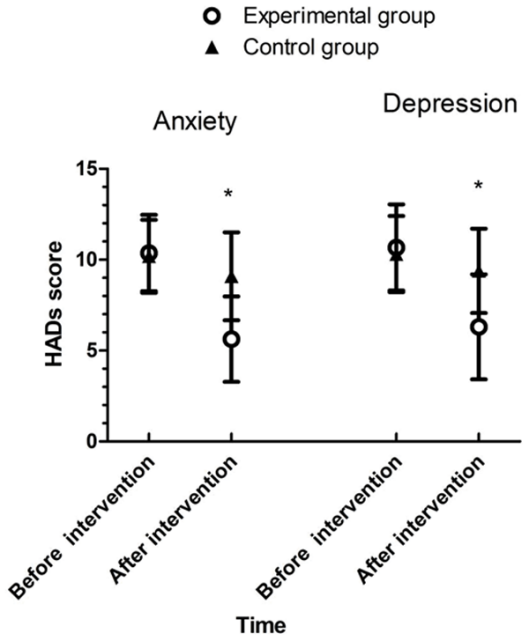

Figure 1. Comparison of the Hospital Anxiety and Depression Scale (HADs) scores between the two groups before and after the intervention. Note: Compared with the experimental group, $^{*}P < 0.05$.

cally significant differences between the two groups.

Assessing the patients' anxiety and depression levels

As shown in **Table 2** and **Figure 1**, the anxiety scores before the intervention in the experimental group were (10.37±2.10) points, and in the control group the scores averaged (10.19±2.01) points. The anxiety scores after the psychological intervention in the experimental group were (5.63±2.35) points, and in the control group they were (9.09±2.42) points, and there was a statistically significant difference between the two groups after the treatment (P < 0.05). The depression scores in the experimental group before and after the intervention were respectively (10.67±2.37) and (6.31±2.89) points, and in the control group they were (10.31±2.09) and (9.39±2.32) points. The results indicated that the anxiety and depression symptoms were improved after the psychological intervention in the two groups.

The general self-efficacy scale (GSEs) scores

There was no significant difference in the GSEs scores between the two groups before the intervention ((21.88±7.17) VS. (22.26±6.93), P=0.37). After the psychological intervention, the general self-efficacy scale scores of the two groups were improved, and the GSEs scores in the experimental group were higher than they were in the control group, the difference was statistically significant ((28.94±5.85) VS. (24.24±5.89), P=0.002) (**Table 3** and **Figure 2**).

Discussion

With the change of the medical model, the phenomenon of somatic disease accompanied by anxiety and depression has generated widespread concern in the field of medical psychology and has drawn the attention of the patients themselves. Studies have shown that anxiety and depression significantly reduce patient treatment compliance, or they even refuse treatment, which seriously affects the curative effect [12-14].

The main reasons for the high incidence of anxiety and depression in elderly patients are: the elderly suffer from a variety of chronic diseases, leading to a decline in the quality of life or a maladjustment to sudden diseases, which makes the physical diseases induce or aggravate the emotional disorders. In addition, the

Table 3. Comparison of the G*eneral Self-Efficacy Scale (GSEs) scores* between the two groups before and after the intervention (points, $\bar{x} \pm s$)

group	Number of cases	Before intervention	After intervention	t	*P*
Experimental group	69	21.88±7.17	28.94±5.85	19.87	0.0004
Control group	66	22.26±6.93	24.24±5.89	4.54	0.0005
t	-	0.31	4.82	-	-
P	-	0.37	0.002	-	-

Note: Compared with the control group, a significant difference is P < 0.05.

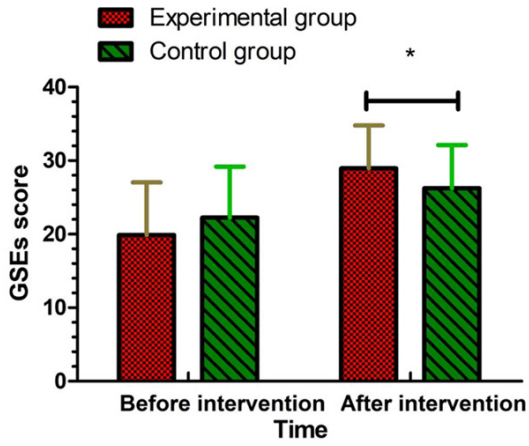

Figure 2. Comparison of the G*eneral Self-Efficacy Scale (GSEs) scores* between the two groups before and after the intervention. Note: Compared with the experimental group, $^{*}P < 0.05$.

economic pressure brought by hospitalization also aggravates the ideological pressure. If they lack the companionship and support of relatives and friends at this time, they will have to pay more attention to anxiety and depression, as the high incidence of anxiety and depression was caused by the counseling [15, 16]. Studies have shown that the main risk factors of anxiety and depression in elderly patients are the death of a spouse, female patients, non-public medical care, more than four kinds of diseases, fewer hobbies, the lack of family care, and so on [17]. Other studies also show that there is a moderate negative correlation between the self-efficacy and the degree of depression among the elderly, that is, the lower the self-efficacy of the elderly, the more serious the degree of depression [18].

At present, the main ways to reduce the anxiety and depression of elderly patients are to establish a good nurse patient relationship, increase nurse patient interaction, and use other measures to maintain the patients' self-esteem and increase the patients' sense of self-worth, so as to reduce their anxiety and depression [19]. In this study, according to the susceptible factors and related factors of anxiety and depression in elderly patients, the intervention group was administered systematic psychological nursing. The results showed that the anxiety and depression scores in the two groups were significantly different from their pre-intervention scores (P < 0.05) after 2 weeks of intervention, but the anxiety and depression scores in the intervention group were much lower than they were in the control group after the intervention (P < 0.05), indicating that the systematic psychological nursing has more obvious advantages than the general psychological nursing at improving the elderly patients with early anxiety and depression. With the system of psychological intervention, the nurses give more care to patients. Through professional psychological intervention, the patients' anxiety and depression levels can be decreased to a certain extent, and through targeted communication between the nurses and the patients, the patients can be relieved. At the same time, the collective psychotherapy made the old patients with few hobbies find their own hobbies again under the influence of their peers, which also alleviated the anxiety and depression of the patients to a certain extent.

Self-efficacy plays an important role in the health management of chronic diseases. Health intervention (including psychological intervention) for patients with chronic diseases should focus on the cultivation and improvement of their self-efficacy [20]. There are four main sources of information to construct self-efficacy: success or failure experience, substitution experience, verbal persuasion, and physiological and emotional states [21]. As shown in our results, the self-efficacy scores of the two groups were significantly different from those before the intervention after two weeks of intervention (P < 0.05), but the self-efficacy scores of the intervention group after the intervention were higher than those of the control

group ($P < 0.05$), indicating that systematic psychological nursing can play a stronger role in enhancing the self-efficacy of patients than traditional psychological nursing.

In conclusion, the incidence of anxiety and depression was higher in the elderly patients, and a psychological intervention program based on the "Timing it Right" framework can effectively reduce the patients' negative emotions of anxiety and depression and enhance their sense of self-efficacy.

Disclosure of conflict of interest

None.

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