

Application of Psychological Elastic Development Model in Postoperative Trauma Growth of Patients with Esophageal Cancer

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Abstract

Purpose: Use the psychological resilience development model to formulate effective nursing measures, and explore the impact of relevant nursing measures on the psychological resilience and post-traumatic growth of patients. **Methods:** Using a general data sheet, post-traumatic growth scale, and psychological resilience scale, 100 patients discharged from the hospital after esophageal cancer were investigated in groups, and statistical software spss26.0 was used for statistical analysis. **Results:** The psychological resilience and post-traumatic growth levels of the experimental group were significantly higher than those of the control group, the P-value. **Conclusion:** As a common gastrointestinal tumor, esophageal cancer is traumatized by surgery. Not only will there be more discomfort during hospitalization, but also a series of complications will still occur after discharge, such as pain, weakness, and other discomforts, which will cause the patient's emotions. Subject to strong fluctuations, the patient suffers great psychological trauma. After being discharged from the hospital, caregivers need to master more related skills when caring for patients, which is time-consuming and labor-intensive, and often causes the patients to feel the emotion of dragging the family members. Under the condition of both physical and psychological pressure, patients often appear fearful and uneasy, and suffer great psychological trauma, which leads to low levels of psychological resilience and post-traumatic growth of patients, and related nursing interventions based on Rutter's psychological development model It can significantly improve the patient's psychological flexibility, improve the patient's post-traumatic growth level, promote the patient's physical and mental recovery, make the patient produce positive emotions, increase positive psychological changes, and thereby improve the patient's quality of life after discharge.

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Keywords

Esophageal Cancer, Post-Traumatic Growth, Psychological Resilience

1. Introduction

Esophageal cancer is a common gastrointestinal malignant tumor. According to the guidelines published by the National Comprehensive Cancer Network (“NCCN”) in 2019, it ranked seventh in the incidence rate and sixth in the mortality. At present, esophageal cancer can be treated mainly by surgery with a complementary therapy of chemoradiotherapy [1]. With a high degree of surgical trauma, postoperative patients suffer more complications due to weak expectoration, additional inflammation, and physical deterioration, resulting in longer recovery time, more discomfort, and poorer prognosis, which often lead to postoperative fear and violent mood swings in patients who would suffer great psychic trauma and even continue to live with anxiety after discharge from the hospital. Psychological resilience is the ability that allows a person to recover from adversity, trauma, tragedy, threat, or other significant stress and to respond flexibly to external changes [2]. In addition to trauma and suffering, the patients would experience positive psychological changes, namely post-traumatic growth, which can make patients recover and grow from trauma themselves (PTG) [3]. This article develops scientific and effective nursing measures to help patients alleviate their mood swings and improve their psychological well-being of the patients and enhance their post-traumatic growth in order to improve their quality of life based on the relevant psychological resilience theory.

2. Objects and Methods

2.1. Objects

A total of 100 patients who had surgery for esophageal cancer at Sun Yat-sen University Cancer Center from January 2018 to January 2019 were selected to participate in the study using a simple randomization method. Inclusion criteria: 1) Patients who had a radical mastectomy for esophageal cancer; 2) Age between 18 and 80 years old; 3) No cognitive impairment. Exclusion criteria: 1) The patients who have mental disorders or are unwilling to cooperate with this study. 2) With the combination of other serious illnesses. 3) Recently suffered other major trauma. One hundred patients were randomly divided into experimental and control groups, in which patients in the control group were discharged according to the conventional teaching of discharge nursing, and patients in the experimental group were intervened according to the psychological resilience theory on the basis of the conventional teaching. The study was approved by the Ethics Committee of our hospital and all subjects signed the Informed Consent Form.

2.2. Methods

2.2.1. Survey Tools

1) General information questionnaire

This questionnaire included gender, age, marital status, educational level, family income, payment method for hospitalization, clinical stages, etc.

2) Psychological resilience scale

The Psychological Resilience Scale [4], written by American psychologists Connor *et al.*, and translated and revised into Chinese by Lei Yang *et al.*, was applied for assessment. The scale included a total of 25 entries in three dimensions: optimism, resilience, and self-improvement, and each entry was scored on a scale of 1 - 5, with a total score of 25 - 125, and a higher score indicates a higher level of psychological resilience of the patient. The Cronbach's α coefficient in this scale is 0.915, which has been widely verified in clinical practice and is a scale that can be used to monitor the psychological resilience of patients in the clinical setting.

3) Post-traumatic growth scale [5]

The scale included 20 entries in five dimensions: interpersonal relationships, new possibilities, personal strength, spiritual change, and life perception, and each entry was scored on a scale of 0 - 5, with a total score of 0 - 100, and a higher total score indicates higher PTG.

The two groups of patients were measured using the three scales respectively at discharge, one month after discharge, and three months after discharge.

2.2.2. Survey Methods

1. Control group: Conventional discharge health training is provided along with telephone follow-ups at one month and three months after discharge.

2. Experimental group: On the basis of conventional discharge health training, interventional care is provided according to psychological resilience theory. In this study, the intervention team for psychological resilience development involved one nurse manager, two members of the psychological specialist team, one nurse in charge, and one nurse practitioner. In addition, the individualized care was developed under the guidance of Rutter's model of psychological resilience development, as follows:

1) The manual of rehabilitation exercises outside the hospital and related videos are prepared, and the patients are given conventional health training and appropriate manuals and videos at the time of discharge. This allows patients to gain more confidence in the self-care and exercise outside the hospital with a better command of the rehabilitation movements and the ability to participate, as well as more relevant skills in response to the disease.

2) We have a long face-to-face conversation (lasting over one hour) with the patients at the time of discharge to understand their emotional state and answer their remaining concerns patiently, and help to increase their awareness of the traumas, resolve their negative emotions, relieve their psychological pressure by encouraging them to see their own merits, face the outside world positively, and

build their confidence in overcoming the disease and living a healthy life.

3) We regularly send knowledge about the disease and precautions, and answer their questions timely, encourage patients to support and communicate with each other to relieve their anxiety and improve their quality of life by establishing a WeChat group for patients after discharge, which consists of team members and department doctors.

4) The team members also carried out health teaching for the primary caregivers of the patients, explaining the physical discomfort and psychological anxiety caused by the disease that the patients were suffering from, and teaching them the precautions for caregiving at home, so that they could master the psychological changes of the patients at each stage, and gain more understanding from the patients' families, and encourage them to communicate more with the patients and give them more emotional support.

5) Every week, we make follow-up phone calls to understand the status of the patients and give appropriate guidance on their rehabilitation progress to improve their confidence during rehabilitation.

2.3. Statistical Methods

The statistical analysis was performed using the statistical software SPSS26.0. The measurement data were described by mean \pm standard deviation ($M \pm SD$), and the enumeration data were expressed by frequency and rate. The independent sample T-test was used for comparison between groups, and the Chi-square test was applied for comparison of rates and constituent ratios. $P < 0.05$ indicated statistically significant difference.

3. Results

Univariate Analysis of Patients' Psychological Resilience

The variations in different literacy levels, disease stages, and cost payment methods showed statistical significance ($P < 0.01$ or $P < 0.05$). The comparison of different ethnic groups, gender, and age showed no statistical significance ($P > 0.05$). For details, see **Tables 1-3**.

4. Discussion

4.1. Effective Nursing Interventions Can Improve the Level of Psychological Resilience of Patients

Esophageal cancer is a common malignant tumor in China, and patients with esophageal cancer often experience negative emotions such as anxiety and depression due to factors such as fear of adverse effects of the disease and related events after discharge [6]. Especially, most patients are still in a fasting state after discharge and need to rely on family members to help with enteral nutrition infusion, therefore, patients are often in anxiety at the time of discharge both for fear of not being able to adapt to their home environment after discharge and that their family members cannot perform their role as caregivers, resulting in

Table 1. Comparison of general information of patients in two groups.

Group	Control group (n = 50)	Observation group (n = 50)	P value
Gender (male/female)	23/27	25/25	0.837
Age (years)	60.7 ± 7.3	61.3 ± 6.7	0.928
Education level	Primary School	5	7
	Middle School	25	24
	University	20	19
Disease stages	I	6	4
	II	27	28
	III	17	18
Expenses	Self-funded	2	4
	New rural cooperative medical system (NCMS)	14	10
	Medical insurance	34	36

Table 2. Comparison of psychological resilience levels between the two groups of patients before and after intervention ($\bar{x} \pm S$) points.

Level	Number of cases	Pre-intervention	Post-intervention
Control group	50	61.35 ± 13.68	61.92 ± 15.01
Observation group	50	62.78 ± 14.11	69.61 ± 9.89
<i>t</i>		-2.57	-0.32
P		0.028	0.633

Table 3. Comparison of post-traumatic growth levels between the two groups before and after intervention ($\bar{x} \pm S$) points.

Group	Number of cases	Pre-intervention	Post-intervention
Control group	50	58.27 ± 11.93	61.22 ± 9.26
Observation group	50	58.62 ± 11.67	67.88 ± 10.11
<i>t</i>		-0.77	0.35
P		-2.370	0.027

physical changes and rehabilitation failure. Psychological resilience, a research variable in positive psychology, plays an important role in the adaptive process of patients. The relevant studies have shown that the patient's psychological resilience is at a low level after esophageal cancer surgery, and those with a heavier physical and emotional burden are more likely to experience negative emotions with lower prognostic confidence, leading to a decrease in their psychological resilience [7]. Rutter's psychological resilience development model contains the following four mechanisms: 1) Mitigation of crisis factor shocks. 2) Mitigation of negative chain reactions. 3) Improvement of self-efficacy and self-esteem. 4)

Opportunities for development [8]. In this study, we developed effective nursing interventions through this model: This intervention helps patients to increase their confidence and generate positive emotions by eliminating patients' concerns about relevant unfavorable factors, reducing their negative emotions, as well as improving self-care capabilities by raising the awareness of caregivers so that patients can get more support. The experimental results of this study also proved that the above nursing interventions were effective in improving the patients' psychological resilience level: the variation showed statistical significance in the control group compared to the experimental group after the intervention $P = 0.028 < 0.05$.

4.2. The Level of PTG Also Increased Significantly with the Increase in the Level of Psychological Resilience

It is shown in **Table 3** that as the level of psychological resilience increased in the experimental group, the level of PTG also increased significantly, $P = 0.027 < 0.05$, the variation showed statistical significance. Individuals with high psychological resilience can cope with the impact of crisis factors more effectively and produce more positive growth in response to the impact of crisis factors, such as PTG [9], as PTG can strengthen the confidence, hope, physical and mental health of patients in response to the disease by empowering them to recover and grow from the trauma themselves [10] [11]. Esophageal cancer, as a major incident, causes serious physical and psychological trauma to patients during diagnosis and treatment, resulting in different degrees of negative emotions, which seriously affect their psychological health and quality of life [12]. In particular, patients have more complications when they are hospitalized, and they still have a series of symptoms after discharge, which often intensify their suffering, affect their quality of life, and even shorten their lifespan [13]. Moreover, the improvement of the patient's psychological resilience can significantly increase the level of PTG in the patient, thus making the patient become more positive and outgoing with persistent hope, which in turn improves their quality of life.

In conclusion, the nursing intervention developed according to the Rutter's psychological development model can effectively improve the level of psychological resilience of the patients, allowing them to achieve better growth after discharge after experiencing the traumatic events of the disease; it can improve the quality of life of the patients after discharge and promote their physical and mental rehabilitation. Therefore, the nursing intervention model in this article is scientifically effective and should be applied further in nursing practice.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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