



# Continuing Care Needs for Patients with Generalized Anxiety after Hospital Discharge

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## Abstract

### Background:

Many patients suffer from health problems arising from different levels of anxiety after hospital discharge. Thus, continuing treatment and care may be critical after discharge.

### Objective:

To explore the application of continuing care in patients with generalized anxiety disorder after discharge.

### Methods:

From February 2012 to December 2015, 162 patients with generalized anxiety disorder after discharge were randomly assigned to control group (n=78) and intervention group (n=84). Planning involves the patients in addressing their individual concerns and desires for a continuing care plan. Patients in the intervention group received telephone follow-up and psychological counseling after discharge. Using data gathered in the assessment, health care providers try to match patients with available resources based on patient eligibility and need. When indisposed symptoms appeared, continuing care was conducted with Chinese massage.

### Results:

Self-rating anxiety scale scores were significantly lower in the intervention group than in the control group ( $P<0.05$ ). Scores of medication compliance and regular return visit compliance were significantly higher in the intervention group than in the control group ( $P<0.05$ ). Scores of quality of life were significantly greater in the intervention group than in the control group ( $P<0.05$ ).

### Conclusion:

Continuing care can relieve various indisposed symptoms and mental stress, lessen anxiety, and elevate quality of life in patients after discharge.

### Keywords

Generalized anxiety disorder; Patients discharged; Acupoint massage; Continuing care

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**Introduction**

Anxiety disorder, also known as anxiety or anxiety disease, is a group of mental disorders taking anxiety as the main clinical phase [1]. In a way, mild anxiety might be useful in helping people with vigilance, learning and general performance. However, in excess it starts to agitate us that normal life and relationships become impaired. Over 10% of people in the world are affected by an anxiety disorder. There are several categories associated with anxiety disorder, each having their own specific causes and characteristics. In “China Classification and Diagnostic Criteria for Mental Disorders” 3rd Edition, anxiety disorders include panic disorder and generalized anxiety [2]. In the “International Statistical Classification of Diseases and Related Health Problems” 10th edition (ICD-10) [3], anxiety disorders can be divided into two main categories: one is circumstantial anxiety, characterized by symptoms that appear because of general stressful events, circumstances or emotions. The second category is chronic anxiety, characterized by symptoms that come and go over an extended period of time from months to even years. The National Institute of Mental Health defines six major categories of anxiety disorder [4], including panic disorder (e.g., a sudden attack of terror, intense fear, or feelings of impending doom that strike without warning and for no apparent reason), Obsessive-compulsive disorders (OCD, involves anxious thoughts or behaviors the individual feels they must do) and phobias e.g., Phobic Social Anxiety Disorder (individual feels overwhelming anxiety and excessive self-consciousness in everyday social situations), Post Traumatic Stress Disorder (PTSD) (a condition that develops generally following a terrifying event. PTSD can result from a number of traumatic incidents such as violent attacks, mugging, rape, torture, terrorism, being held captive, child abuse, serious accidents and natural disasters), and generalized anxiety disorder (GAD). GAD is characterized by chronic excessive worry accompanied by three or more of the following symptoms: restlessness, fatigue, concentration problems, irritability, muscle tension, and sleep disturbance. Clinical data statistical analysis indicated that GAD is the most common anxiety disorder to affect older adults. GAD affects about 6% of the population and affects twice as many women as it does men [5].

GAD patients generally have a combination symptom of emotional, behavioral and physical

that often fluctuates, becoming worse at times of stress. GAD symptoms may vary from mild anxiety (feeling tense and worried), to palpitations, nausea, chest pains, difficulty in breathing, dizziness, vertigo, feeling ‘unreal’, having ‘jelly legs’, intense sweating, faintness, restricted vision and hearing and feelings of impending insanity or death (i.e., panic symptoms) [6]. The serious GAD may heavily affect the daily work, learning and communication and other social functions, and become pathological anxiety. It has long been recognized that particular somatic symptoms in pathological anxiety, such as hyperventilation, palpitations, and perspiration, are indicative of altered autonomic activity. Psychiatric symptoms are an inner experience of nervousness, fear of worry about the inner experience. Physical symptoms are based on the symptoms of the nervous system associated with hyperactivity of autonomic nervous system, feeling nervous, chest tightness, palpitations, sweating and muscle tension tremor. Pathological anxiety lasts longer. Without active treatment, pathological anxiety could be protracted and hardly cured. Most hospitalized patients are asked to be discharged after the disease symptoms disappear. Due to a lack of knowledge on self-care and regulation after discharge, a number of patients may be hospitalized again. Therefore, the continuous care led by a professional nurse can compensate for the lack of self-awareness of the patients [7-9].

From January 2012 to December 2015, our hospital carried out continuous care of 162 patients with GAD discharged by the use of telephone follow-up, psychological counseling, with the characteristics of traditional Chinese medicine acupressure and other nursing care. This effectively reduces the patient’s anxiety, eases the various symptoms of discomfort, the treatment effect is remarkable. This study sought to further verify whether continuing care could improve anxiety in patients after discharge and decrease the rate of readmission.

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**Subjects and Methods****■ Participants**

Total 162 patients of GAD discharged from January 2012 to December 2015 were volunteered to participate in this study. All patients on admission were in accordance with the diagnostic criteria for generalized anxiety disorder of “China Classification and Diagnostic Criteria for Mental Disorders” 3rd

edition (CCMD-3) [2]. These patients show sustained anxiety; often feel fear, accompanied by autonomic symptoms or physical disorders. The course of the disease is more or equal to 6 months. Patients cannot get rid of anxiety by themselves, and cannot carry out normal social activities [10]. Exclusion criteria: exclusion of hyperthyroidism, hypertension, coronary heart disease and other physical disability secondary anxiety; exclusion of excitement drug overdose; hypnotic analgesic drugs or anxiolytic drugs withdrawal reaction; exclude obsessive-compulsive disorder, phobia, suspicion, nerve Weakness, mania, depression or schizophrenia associated with anxiety. 162 patients were all above primary school education. The total 162 patients with generalized anxiety disorder after discharge were randomly assigned to control group (n=78) and intervention group (n=84).

Intervention group (n=84) contained 44 males and 40 females, at the age of 16–65 years. Intervention nursing time was 3–24 months (averagely 8 months). Control group (n=78) contained 35 males and 43 females, aged 18–67 years. There were no significant differences in sex, age, and educational level, course of disease, medical expenses and payment methods between the two groups ( $P>0.05$ ).

## Methods

78 patients in the control group were given general discharge guidance at discharge. We regularly (a total of 6 time's follow-up phone call) asked patients with general physical condition, symptoms and medication. According to the patient feedback we give health education, psychological counseling, to remind them to take medicine on time as well as regular referral. In the intervention group, 84 patients were given general discharge guidance at the time of discharge. After discharge, they were given continuing care every 4–7 days by an extended care team. This team was composed of a physician and three nurses, who had comprehensive professional knowledge and strong communication skills. Before continuing care, team staffs were professionally trained. Nursing staffs must understand the continuation of care programs and acupressure methods. They were asked to choose acupuncture points to be accurate, and massage in the correct way.

This study was approved by the ethic committee at Linyi Hospital of Traditional Chinese Medicine and Fudan University Ethics Committee (No.

290). Written informed consent was obtained from each subject prior to inclusion in the study.

### ■ Choice of intervention time

At least once a week after discharge. According to assessment results each time, the number of follow-up is increased, as appropriate.

### ■ Form of intervention

According to the needs of patients, the nursing care team regularly visited patients and answered all the medical issues and concerns related to their health. We also provide medicine consultancy by telephone, network and other selected communication ways.

### ■ Intervention content

Including diet, activities, psychological counseling, medication compliance and other personal details of life, to conduct a comprehensive intervention, personalized care. At the time of discharge, a designated member from the extended care team communicated with the patient and family members informing them of the purpose, form, time, content and method of continuing care. The patient and family members agreed to sign the extended care service agreement. Team members should give health guidance, teach patients and their families to fill out the "Health Education Monitoring Manual", and to do massage timely until symptoms lessened. Home visits were conducted at least six times in total, and retain contact information of patients and their families. At the 6<sup>th</sup>, 13<sup>th</sup>, 27<sup>th</sup> day, and the end of 2<sup>nd</sup>, 4<sup>th</sup>, and 8<sup>th</sup> month after discharge, conventional telephone interviews were implemented for patients and their families. Team members asked patients with general physical conditions, medicine concerns, subjective symptoms, and psychological feelings. Patients were encouraged to share nice therapeutic effects with other patients. After telephone interviews, individualized care plans were developed according to the patient's condition. On the next day after telephone interview, home visits were arranged for patients who experienced headache and dizziness. Team members gave psychological support and counseling, improving medication compliance, teaching patients to accurately select the appropriate acupoints

### ■ Evaluation index

(1) Self-rating anxiety scale (SAS): 20 items, 4 grades, evaluation for patients' subjective feelings. Evaluation standards: SAS standard

score>50 means anxiety; SAS score>62 indicates severe anxiety.

(2) Comparison of medication compliance and regular return visit compliance after continuing care in both groups.

(3) Comparison of quality of life in both groups. We used the quality of life questionnaire to evaluate the life quality of the two groups of patients. The survey included 4 major categories of physical function, physical pain, emotional and social functions which include 30 items. The answer of "None" scores 4, "sometimes" scores 3, "yes for most of the time" scores 2, and "yes for all time" scores 1. Higher score indicated better quality of life.

#### ■ Data processing

Data were analyzed using SAS 19.0 software. Measurement data were expressed as the mean ± standard deviation. Two independent samples were compared using *t*-test. Numeration data were compared using *chi*-square test. A value of  $P<0.05$  was considered statistically significant.

### Results

Total 162 patients of GAD discharged from January 2012 to December 2015 were volunteered to participate in this study. They were randomly assigned to control group (n=78) and intervention group (n=84). Intervention group (n=84) contained 44 males and 40 females, at the age of 16-65 years. Intervention nursing time was 3-24 months (averagely 8 months). Control group (n=78) contained 35 males and 43 females, aged 18-67 years.

All the patients of GAD in the two groups have similar SAS score statistics on average at the timing of discharge. **Table 1** show that there is no significant difference in SAS score detectable between the intervention and control groups at the initial time of discharge from the hospital ( $P>0.05$ ). After the discharge, the 84 patients in the intervention group were given additional continuing care every 4-7 days by an extended professional nursing care team. According to the needs of patients, the nursing care team regularly visited patients and answered all the medical issues and concerns related to their health. We also provided patients with medical consultancy including diet, activities, psychological counseling, medication compliance and other personal details of life, to conduct a comprehensive intervention, personalized

care by telephone, network and other selected communication ways. **Table 2** showed that SAS score was significantly lower in the intervention group than in the control group after 14 days continuing care ( $P<0.05$ ). SAS score was further decreased at the end of 2nd and 8th month during continuing care in the intervention group.

Noted that the total 78 patients in the control group were only provided regular general discharge guidance at discharge. We regularly (a total of 6 time's follow-up phone call) asked patients with general physical condition, symptoms and medication. There was no significant difference in SAS score detected at 14<sup>th</sup> day, end of 2nd and 8th month after discharge as compared with the time of discharge in the control group ( $P>0.05$ ; **Table 1**).

Scores of medication compliance and regular return visit compliance were significantly higher in the intervention group than in the control group ( $P<0.05$ ; **Table 2**). Except the similar physical pain level for the two groups, scores of physiological function, emotional function and social function in the quality of life form were significantly higher in the intervention group than in the control group ( $P<0.05$ ; **Table 3**). These results clearly demonstrate the effect of continuing care in reducing suffering and anxiety level of patients after discharge. The continuing care provides warm, empathetic humanitarian follow-up consultation to patients. The data analysis indicated that such warm follow-up care indeed promotes rehabilitation, reduces the rate of readmission and health service costs, and has good social and economic benefits.

### Discussion

#### ■ Massage relieves patient's anxiety

Generalized anxiety disorder (GAD) is a mental disorder characterized by excessive, uncontrollable and often irrational worry, that is, apprehensive expectation about events or activities [10]. GAD is accompanied with significant autonomic symptoms, muscle tension and exercise disturbances. Extensive anxiety is associated with the nervous system. The autonomic nervous system is distributed throughout the body and associated with the body acupuncture points [11]. So the massage through the acupuncture points can play a role in alleviating anxiety [12,13]. Clinical evidences showed that massage at Taiyang (EX-

HN5) acupoint can lessen headache, relieve fatigue, hearten spirit, and keep the brain awake and focused [14]. Neiguan (PC6) locates on the palmar aspect of the forearm, 2 cun above the transverse crease of the wrist [15,16]. Massage at PC6 can relieve palpitation, nausea, and insomnia induced by excessive tension. Yongquan (KI1) locates on the sole of the foot, at the junction of the anterior one third and the posterior two thirds of the line connecting the heel with the web margin between the bases of the second and third toes [15,16]. Massage at KI1 can ease dizziness, anxiety, irritability, and insomnia. Application of continuous care can effectively assist patients to find accurate acupuncture points, the corresponding point massage, relieve or eliminate all kinds of symptoms, improve patient self-confidence [15,16].

Continuing care can reduce rehospitalization [8,9]

The etiology of anxiety spans biological, genetic and sociological domains, and brings a certain difficulty for clinical treatment and rehabilitation. Moreover, drug treatment brings physical discomfort and economic difficulties for patients. Illness can be delayed and uncured, repeatedly, so patients are easy to lose confidence in long-term treatment. The above situations cause patients with poor medication compliance after discharge. For example, we treated a generalized anxiety disorder in 2005, female, 52 years old, due to dizziness, fatigue, palpitation, irritability, insomnia 7 months to our hospital. After taking medication, psychological counseling and other medical treatment in hospital for 1 month, negative symptoms disappeared, and the patient slept well at night. The patient believed that the disease has been cured and therefore required discharge. At discharge, the patient was required to follow discharge guidance, including medication on time, maintaining emotional stability, and return to hospital for physical examination after half a month. However, this patient neither took medication regularly, nor returns to hospital for medical examination. After 1 and half month, this patient has negative symptoms back and was rehospitalized. Within the next 2 years, this patient hospitalized and discharged repeatedly for seven times. Each time when negative symptoms disappeared, she insisted on discharging, and always thought her symptoms had been cured. However, her mental situation became progressively worse after several times of rehospitalization. The worst thing is that medicine gradually loses its effect on her

**Table 1: SAS scores (mean±SD) in both groups before and after intervention (t-test) .**

Group	SAS			
	At discharge	14 days post-discharge	2 months post-discharge	8 months post-discharge
Intervention (n=84)	48.2±5.45	42.17±5.01	34.02±4.30	26.23±3.22
Control (n=78)	46.90±5.52	45.48±5.24	44.92±4.98	45.28±4.32
P	>0.05	<0.05	<0.05	<0.05

**Table 2: Medication compliance and regular return visit compliance in both groups (compliance score, mean±SD).**

Group	Medication compliance	Regular return visit compliance
Intervention (n=84)	3.58±0.38	0.72±0.42
Control (n=78)	3.16±0.72	0.56±0.38
X2	12.3	13.6
P	<0.05	<0.05

**Table 3: Comparison of score of quality of life in both groups (point, mean±SD).**

Group	n	Physiological function	Physical pain	Emotional function	Social function
Intervention (n=84)	84	93.8±5.6*	79.8±7.8*	49.6±5.6*	72.4±7.5*
Control (n=78)	78	81.4±7.6	79.8±7.8	39.5±3.6	58.4±7.2

\*P < 0.05, vs. control group

situation. During the seventh rehospitalization, treatment after two and a half months, all kinds of insomnia symptoms remain hard to eliminate. Several months later, the patient took poison and passed away at home. If continuing care was performed after discharge, patient was cared to follow medication compliance, especially application of the traditional Chinese medicine massage, it is possible to promptly eliminate all kinds of symptoms, improve patient confidence in the disease, so that patients can feel the human care after discharge. This may avoid the degraded health condition. Hence, these experiences make the continuing care necessary, and even critical.

**■ Continuing care effectively elevates quality of life**

Continuing care [8] is of great significance in saving society and family human resources. Continuing care is a continuation of patient information. In different health facilities, continuing care ensures the accuracy of patient information in different medical settings and referral procedures to ensure that patients are always given access to health care. Simultaneously, there is a loyal and trusting relationship between caregivers and patients. In the past, patients discharged from hospital would mean the end of the relationship between patient and hospital. Patients can get

information related to the rehabilitation by return visit. It is difficult to meet the needs of patients in a timely manner sometimes. Previous studies have shown that most health problems are resolved during hospitalization, but many patients suffer from different levels of health problems after discharge. Thus, continuing treatment and care are very important after discharge [17]. Needs of knowledge on self-conditioning, condition observation and health care are increasing after discharge [7,18-20]. At the same time, the demands for continuous health care are also increased. Therefore, we try to take continuous care after discharge measures. We give specific guidance according to the patient's needs. We answer the patient's concerns, and give the patient psychological support, so that patients with the disease is full of hope and confidence in recovery, so as to improve patient compliance, effectively improve the quality of life of discharged patients..

Continuing care is a part of holistic nursing care and a continuation of inpatient care, makes patients discharged receive continued health care, promotes rehabilitation, diminishes the rate of readmission and health service costs, and has good social and economic benefits [8]. A team led by Professor Wong, Frances Kam Yuet from Hong Kong Polytechnic University performed a series of studies addressing continuing care [18,21]. Results suggested that continuing care effectively reduced the rate of readmission in chronic disease patients and elderly patients after discharge, and lessened family care burden and economic burden [18,21,22]. The application of continuous care can make patients after discharge still feel the hospital has been concerned about and support them so that they lifted the sense of loneliness, the formation of a help atmosphere, enhance patient self-confidence. Simultaneously, family members can learn basic nursing skills so that patients get better care and feel strong support, which effectively alleviates patient's anxiety [23]. Patients receiving continuous care generally show great willing to return to work

and society as soon as possible. Improve the daily life ability, causing the patient once again the fun of life; re-establish the concept of life to enjoy. This also effectively relieves the patient's anxiety [21].

### Conclusions

This study emphasized the importance of postdischarge continuing care in reducing readmission rate for GAD patients with mental or psychiatric disorders. The patient may still be vulnerable after hospital treatment, easily relapsing the disease again. Our study indicated that if the hospital can take a little further actions on continuing care (especially to provide warm, empathetic humanitarian follow-up consultation) of patients after discharge, the disease will get really complete treatment and life quality of patients could get much better improved. Although preliminary, this finding provides initial information about the type of care that could be beneficial for patients with generalized chronic anxiety. Indeed, continuing care could be one of effective cognitive-behavioral therapy treatments for patients. Further step is to conduct randomized controlled trials of the impact of specific linkage strategies on rates of continuing care attendance, rehospitalization, and patient functioning. This continuation of care may be also important for treatment of other diseases, eg., postpartum depression and drug addiction.

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### Conflicts of Interest

The authors declare no competing financial interests.

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