



## Interrelation among alexithymia and negative psychology of nursing personnel and their coping style

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### Abstract

**Objective:** The purpose of the current study was to discuss the interrelation among alexithymia and negative psychology of nursing personnel and their coping style, so as to provide a theoretical basis for better mental health education and psychological intervention for nursing personnel.

**Methods:** A questionnaire survey was administered to 503 nursing personnel sampled from a hospital in Henan Province between May and June 2010 by means of survey instruments of the Toronto Alexithymia Scale-20 Items (TAS-20), the Trait Coping Style Questionnaire (TCSQ), and the General Health Questionnaire (GHQ-20).

**Results:** (1) Alexithymia and a negative coping style had a positive correlation with negative psychology ( $P<0.01$ ), while a positive coping style had a negative correlation with negative psychology ( $P<0.01$ ). (2) The model fitting indices of coping style as intermediate variables between alexithymia and negative psychology were  $\chi^2/df=1.459$ , RMSEA=0.030, CFI=0.995, IFI=0.995, RFI=0.966, TCI=0.989, and NEI=0.985, indicating a good model fitting. Ninety-nine percent of the total variation of negative psychology could be explained by alexithymia and coping style, of which the indirect effect affecting negative psychology by coping style accounted for 94.59% of the total.

**Conclusion:** Alexithymia and coping style were very important factors for improvement of current mental status of the nursing personnel, especially for a change in negative coping style and selection of good coping style.

**Keywords:** Nursing personnel, Physical and mental health, Psychological intervention, Alexithymia, Negative emotion, Coping strategy

### Introduction

Studies have shown that current mental status of nursing personnel is poor [1], which mainly results from negative psychology, such as anxiety and depression [2]. As a stable personality trait [3], alexithymia is an important factor for negative psychology, such as anxiety and depression [4, 5]. Trait coping is closely related to individual mental health by reflecting the

stable coping style and the relationship with the personality traits of individuals. Studies have shown that coping style plays a partial intermediary role [6] between relationship of alexithymia and depressive emotions of college students. There are few studies involving the interrelations among alexithymia, coping style and negative psychology of the nursing personnel who have relatively more

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negative emotional problems. On the basis of relevant analysis, this study adopted a structural equation model technique to study the interrelations among the three elements, find internal relationships among the elements from a structural level, and provide a theoretical basis for targeted mental health education and mental intervention for nursing personnel.

## Objective and methods

### Objective

Between May and June 2010 a cluster sample of 556 nurses was selected from different departments of a grade-3A hospital in Xinxiang City, Henan Province. Five hundred fifty-six questionnaires were distributed to each of the nurses for survey. The authors received consent from all participants.

### Methods

The scales were bound together into book form in order of difficulty. The nurses to be surveyed were offered to choose to answer the questionnaire anonymously. The survey was carried out in departments of the hospital with the coordination of the hospital leaders. Questionnaires were completed and collected on site. The survey instruments were as follows: (1) 20-item Toronto Alexithymia Scale [7] (TAS-20; Chinese version), including 20 items from three factors (factor 1, identification of affective disorder, including 7 items; factor 2, description of affective disorder, including 5 items; and factor 3, extroverted thinking, including 8 items). Each item should be scored according to five grades (1–5). The higher the score achieved, the more serious the alexithymia. This scale is recognized to be reliable and effective. According to this scale, the coefficient  $\alpha$  was 0.83 and the test-retest reliability in the study was 0.88. (2) The Trait Coping Style Questionnaire (TCSQ) [7], prepared by Ganjin Jiang in 1993, initially consisted of 16 items and was amended to 20 items in 1999. The TCSQ was used to reflect the existing individual coping styles with relative stability and related to personality trait. This questionnaire was composed of two subscales (positive coping [PC] and negative coping [NC]). Each subscale included 10 items and each item was scored on five grades. Both subscales were proved to have reliability and effectiveness and the measurement results of an object were highly correlated with that of relatives. (3) The General Health Questionnaire

(GHQ-20) [8], include 20 items, which were all “yes-or-no” choice questions. The subjects were required to point out their feelings in recent several weeks by choosing “yes” or “no,” with the exception of items 7 and 30, for which reverse scoring was used. For the other items, 1 point was assigned for “yes” responses and 0 points were assigned for “no” responses. Item 1 (item 6 was deleted) was a self-esteem scale, measuring the positive aspects of mental health. The higher the score the subject received, the higher the self-esteem degree. Items 10–14 were a depression scale and items 15–20 were an anxiety scale. Both scales were used to measure the negative aspects of mental health. The higher the score the subject received, the more serious the depression and anxiety experience. The coefficient  $\alpha$  was 0.619, 0.700, and 0.693 for the 3 sub-scales, respectively. In this article, NP was used to represent the total score of negative psychology, which was composed of depression and anxiety scales.

### Statistical methods

The EpiDals database was used for data input. SPSS 13.0 was used as statistical software for person-related analysis. Amos 5.0 was adopted to establish a structural equation model.

## Results

### General information

General information verified that the 503 questionnaires recovered were valid and the validity rate was 90.47%. All 503 nursing personnel were female, 21–49 years of age (average=27.87±6.00 years). Among the nursing personnel, 230 were unmarried (45.7% of the total), 262 were married (52.1% of the total), and 337 obtained technical secondary education or below (67.1% of the total).

### Negative psychological status of nurses

The total average score of nurses' negative psychology was 3.70±2.61, of which anxiety was 2.96±1.93 and depression was 0.74±1.14.

### Analysis on the interrelation among nursing personnel alexithymia, coping style, and negative psychology

The average score of alexithymia was 54.82±8.43, the positive coping was 35.09±6.73, and the negative coping was



27.39±7.31. There was an interrelation between each two of the three elements, i.e., alexithymia, coping style, and negative psychology ( $P<0.01$ , Table 1).

### Structural equation model of alexithymia, coping style, and negative psychology of nursing personnel

To further study the role of coping style between alexithymia and negative psychology, a structural equation model was established to reflect the interrelation among the three elements by using Amos 5.0 for model fitting analysis (Figure 1). From the model we could see that 50% of the total variation of coping style could be explained by alexithymia, while 99% of the total variation of negative psychology could be explained by coping style and alexithymia together (Figure 1; refer to Table 2 for the model fitting index and Table 3 for the different effect of various factors on negative psychology). The direct effect of alexithymia on negative psychology accounted for 5.41% (0.039/0.721) of the total effect. The indirect effect on negative psychology from the intermediary role of coping style accounted for 94.59% (0.682/0.721; Table 3) of the total.

### Discussion

This study showed that the higher the score of nursing personnel negative psychology, the poorer the psychological status. This result was consistent with the results of previous studies [1]. According to relevant analysis, alexithymia and negative coping style had a positive correlation with negative psychology, while positive coping style had a negative correlation with negative psychology. Alexithymia and negative coping style

Table 1. Interrelation among alexithymia, coping style, and negative psychology

	NP		NC		PC	
	r value	P value	r value	P value	r value	P value
NP						
NC	0.513	0.000				
PC	-0.454	0.000	-0.380	0.000		
TAS-20	0.487	0.000	0.444	0.000	-0.330	0.000

Note: NP=total score of negative psychology composed of depression scale and anxiety scale; NC=negative coping; PC=positive coping; TAS-20=20-item Toronto Alexithymia Scale.

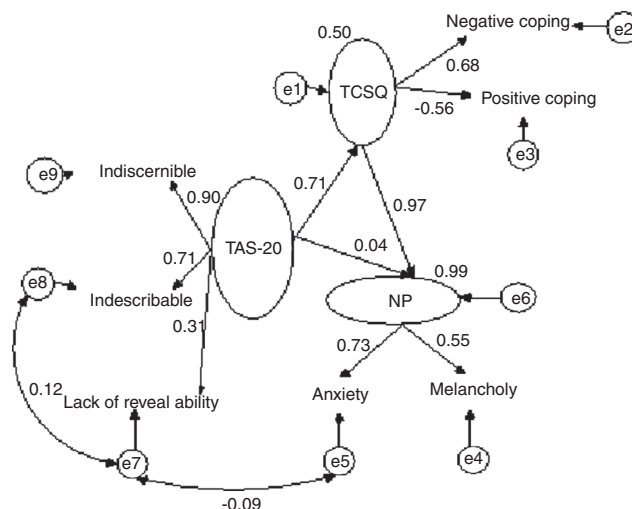


Fig. 1. Structural equation model of alexithymia, coping style, and negative psychology.

Table 2. Model fitting index

$\chi^2$	df	NEI	RFI	IFI	TCI	CFI	RMSEA
13.128	9	0.985	0.966	0.995	0.989	0.995	0.030

Table 3. Different effect of various factors on negative psychology

Variable	Direct effect	Indirect effect	Total effect
Coping style			0.966
Alexithymia	0.039	0.628	0.721

had a positive predictive effect on nursing personnel negative psychology, while positive coping style had a negative predictive effect on the same. This result was also consistent with the results of previous studies [9, 10]. It was verified that alexithymia and coping style were the important factors of negative psychology, such as anxiety and depression.

As shown in the structural equation model, alexithymia could directly result in negative psychology to an individual or indirectly cause negative psychology by assuming a bad coping style. This result was consistent with the results of other studies. Some studies have reported that patients with alexithymia would pay more attention to physiological information instead of emotional information, and pay attention to external activities instead of inner activities (extroverted thinking) [11].



Patients could not identify and describe the negative emotional response, and were incapable to disclose their inner feelings; as a result, the negative emotions could not be relieved, and resulted in physical symptoms and even physical diseases [12].

In contrast to the results of previous studies [6, 10], it was discovered in this study that the indirect effect on negative psychology resulting from alexithymia by affecting coping style accounted for 94.59% of the total effect, which was higher than the direct effect (5.41%). This indicated that the effect of alexithymia on nursing personnel negative psychology was realized, mainly through the intermediary role of coping style. Studies have shown that different coping style had a predictive effect on an individuals' current mental health conditions, thus positive coping style could relieve mental pressure and maintain the mental health level effectively, while a negative coping style increased mental stress and affected mental health [13, 14] due to unreasonable application of strategies for solving problems. Some studies have shown that patients with alexithymia were unable to get enough resources when facing stressful life events, resulting in cognitive coping of catastrophizing and low positive evaluation, so that negative emotional response [15] would be induced. As further presented in the studies of Jinyao Yi and others [16], a patient with alexithymia preferred to take negative cognition and coping style in case of a stressful event, such as rumination, catastrophizing, and blaming others, instead of taking positive cognition for adjustment. As reported, when coping with a stressful event, nursing personnel preferred to take negative coping style, such as fantasy and evasion [17]. In case of a stressful event, negative coping style, such as self-accusation, depression, prevarication, and evasion, would not only prevent solution of problems, but also make the event worse [18] and increase the occurrence of negative emotions. Therefore, it was much easier for nursing personnel with bad emotional expression to assume a negative coping style and have anxiety and depression and other negative psychology.

This study showed that alexithymia and coping style explained 99% of the total variation of nursing personnel negative psychology and the indirect effect produced by negative coping style was significant. Alexithymia and coping style were very important factors for improvement of nursing personnel current mental status. In addition to improvement

of emotion expression mode and the ability to identify and describe moods, alexithymia and coping style were especially important to help nursing personnel choose and use good coping style. Only in this way could the nursing personnel negative psychology, such as anxiety and depression, could be further reduced and prevented.

### Conflict of interest

The authors declare no conflict of interest.

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