

✧ RESEARCH PAPER ✧

Effects of coping styles and stressful life events on depression and anxiety in Japanese nursing students: A longitudinal study

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Accepted for publication March 2009

Shikai N, Shono M, Kitamura T. *International Journal of Nursing Practice* 2009; 15: 198–204

Effects of coping styles and stressful life events on depression and anxiety in Japanese nursing students: A longitudinal study

Nursing students face stressful situations during a clinical training. This two-wave (between June and December 2004) study explored the relationship between the coping styles and stressful life events in terms of the occurrence of depression and anxiety among 97 Japanese female nursing students before (Time 1) and after (Time 2) a clinical training. In a structural equation modelling, Time 2 depression was significantly predicted by Time 1 depression and stressful life events whereas Time 2 anxiety was predicted by Time 1 anxiety, stressful life events and emotion-oriented coping. Moreover, Time 1 depression predicted the impact of stressful life events and Time 1 anxiety predicted emotion-oriented coping.

Key words: coping style, stressful life events, depression, anxiety, nursing training.

INTRODUCTION

Nursing practice is with distress as well as satisfaction. During their clinical training, nursing students encounter stressful situations of the kind that nurses do in practice.¹ These situations are multifaceted including death and

dying of patients, conflicts with physicians, inadequate preparation for actual clinical demand, lack of support from mentors and heavy work load.^{2,3} Most published studies have merely identified actual stressful situations. What is needed to be studied for the development of effective intervention and prevention of psychological maladjustment such as depression and anxiety among nursing students during their clinical training is the psychological mechanism of the development of such maladjustment. Among the factors that have been proposed as related to the appearance of depression and anxiety are coping styles and stressful life events.^{4,5}

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Research examined the relationship between coping styles and depression and anxiety^{6–8} for the diverse kinds of sample. Among several broad categories of coping styles that have been distinguished, Endler and Parker's three-factor model including the emotion-oriented, task-oriented and avoidance-oriented copings is probably the most robust psychometrically.⁹ Emotion-oriented coping pertains to emotional responses, self-preoccupation and fantasizing reactions. Task-oriented coping pertains to conscious initiation of actively dealing with the problems. Avoidance-oriented coping pertains to behaviours to avoid direct dealing with the problem and distracting attention from it. Emotion-oriented coping has been suggested to have a relation to negative health variables such as depression, anxiety and poor recovery from bodily illnesses.^{7–10} Task-oriented coping style has been reported as related to adaptive health variables in many studies^{7–9,11} but not always so.⁸ Avoidance-oriented coping style has been reported to be correlated with maladaptive health variables,^{9,12} although Park and Adler reported no such link.¹³ Studies on the relationship between the coping style and psychological adjustment are based on a cross-sectional design.^{8,14,15} Those studies are, though suggestive, subject to criticism regarding causality. Hence, longitudinal studies deserve consideration.

A considerable amount of research documents the effects of stressful life events on depression and anxiety.^{16–18} Not all the kinds of populations are equally at risk for exposure to such stressful situations. Student populations have been shown to contain significant levels of symptomatology.^{19,20} Especially, nursing students during clinical training experience a variety of stressful life events, for example complicated interpersonal relationship, heavy workloads, academic training, clinical settings, competitive environments and the limitation of time for leisure activities, which are at particular risk for developing anxiety and depression.²¹

Also of importance is the possible influence of depression and anxiety on the impact of stressful life events and the choice of coping styles to adapt to such situation.

In this study, we tested the following three research questions:

1. Do stressful life events during nursing students' clinical training influence depression and anxiety after the training?
2. Do coping styles mediate the effects of stressful life events on depression and anxiety?
3. Do depression and anxiety influence both the impact of stressful life events and coping styles?

METHOD

Participants

Students from two nursing schools in Japan participated in our study. Their participation was voluntary, and anonymity was ensured. They were all Japanese. Among eligible students (time 1 = T1: $n = 166$, time 2 = T2: $n = 163$), 151 (90.9%) at T1 and 148 (90.7%) at T2 participated in this study. Participants with missing data of any of the variables were excluded from further analyses, yielding a final sample size of 103 participants (6 men and 97 women). Because the participants were predominantly women and no differences among variables of women and men were observed, only the data of female students ($n = 97$) were used. Their average age was 21.2 years ($SD = 2.1$) ranging from 19 to 32 years at T2. This research was performed between June and December 2004.

Ethics

This project was approved by the Ethical Committee (Institutional Review Board) of Kumamoto University Graduate School of Medical Sciences.

Measures

Mood states

Depression and anxiety were measured by the Japanese version²² of the Hospital Anxiety and Depression Scale (HADS).²³ This is comprised of 14 items—seven for Depression (HADS-D) and seven for Anxiety (HADS-A)—on a four-point scale from 0 to 3. The HADS measures cognitive symptoms of depression and anxiety deliberately excluding somatic items of depression and anxiety. The possible range of scores is thus from 0 to 21 for each of the two subscales. A higher score indicates more severe depression or anxiety. The reliability and validity of the HADS are well established.^{24,25}

Coping style

The Japanese version²⁶ of the Coping Inventory for Stressful Situations (CISS) is a self-report measure of individual's typical patterns of coping. There are 48 items with a five-point scale (1 = not at all, 5 = very much). They include three orthogonal subscale dimensions with 16 items each: task-oriented coping, emotion-oriented coping and avoidance-oriented coping. The range of possible

scores of each subscale is from 16 to 80, with higher scores indicating the greater use of a given coping style.

Life events

The impact of the stressful life events that had occurred in the last 6 months was measured by a single item:

Consider things happening in the last six months that were undesirable, upsetting, unhappy, awful, or saddening and estimate the impact that they have given to you. Rate it as 0 if there were no negative effects up to 100 that were the worst.

Procedure

Participants completed the questionnaires on two occasions. T1 was before the clinical trainings and T2 was after the clinical trainings. At T1, they completed the HADS, and at T2 CISS and HADS questionnaires and the level of the stressful life events were completed. Questionnaires were distributed in classes and returned by hand. Informed consent was obtained from all subjects as part of the questionnaires.

Statistical analyses

First, correlation analyses were conducted among all variables and significant variables with T2 HADS-D and

HADS-A were confirmed. Next, a path model was examined. We hypothesized that T1 HADS-D and HADS-A would predict the perceived stressful life events, T2 CISS and T2 HADS-D and HADS-A, that the perceived stressful life events would predict T2 CISS and T2 HADS-D and HADS-A, and that T2 CISS would predict T2 HADS-D and HADS-A. Model fit was ascertained using the following goodness-of-fit statistics: χ^2 /degree of freedom ratio (CMIN/DF), comparative fit index (CFI), goodness of fit (GFI), adjusted goodness of fit index (AGFI), root mean square error of approximation (RMSEA) and Akaike Information Criterion (AIC). According to conventional criteria, an adequate fit would be indicated by CMIN/DF < 2, GFI > 0.90, AGFI > 0.85, CFI > 0.95 and RMSEA < 0.05.²⁷ The AIC was used for the comparison of different models. A model with an AIC with at least two points lower is regarded as a better model. These analysis were conducted by SPSS 11.0 (SPSS Inc., Chicago, IL) and AMOS 4.0 (SmallWater, Chicago, IL).

RESULTS

The means, standard deviations and the correlation matrix between all variables included in this study are presented in Table 1. The potential and actual ranges of variables are also indicated in Table 1.

Table 1 Potential and actual ranges, means, standard deviations, Cronbach's alpha coefficients and correlations of the variables in 97 female nursing students

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) T2 HADS depression	—	—	—	—	—	—	—	—
(2) T2 HADS anxiety	0.701***	—	—	—	—	—	—	—
(3) T1 HADS depression	0.403***	0.353***	—	—	—	—	—	—
(4) T1 HADS anxiety	0.305***	0.458***	0.667***	—	—	—	—	—
(5) Stressful life events	0.474***	0.516***	0.248	0.211	—	—	—	—
(6) Emotion-oriented coping	0.394***	0.560***	0.299**	0.329**	0.462***	—	—	—
(7) Task-oriented coping	-0.221	-0.106	-0.058	0.048	-0.137	0.122	—	—
(8) Avoidance-oriented coping	-0.190	-0.015	-0.155	-0.008	-0.078	0.311**	0.323**	—
Potential range	0–21	0–21	0–21	0–21	0–100	16–80	16–80	16–80
Actual range	0–17	1–18	0–15	0–18	0–100	22–66	23–68	20–73
Mean	6.08	8.57	5.97	7.67	62.25	40.49	43.65	40.94
Standard deviation	3.66	4.15	3.36	3.94	25.09	10.32	10.12	10.22
Cronbach's alpha	0.72	0.82	0.67	0.84	NA	0.85	0.88	0.81

** $P < 0.01$; *** $P < 0.001$. HADS, Hospital Anxiety and Depression Scale; T1, before the clinical training; T2, after the clinical training.

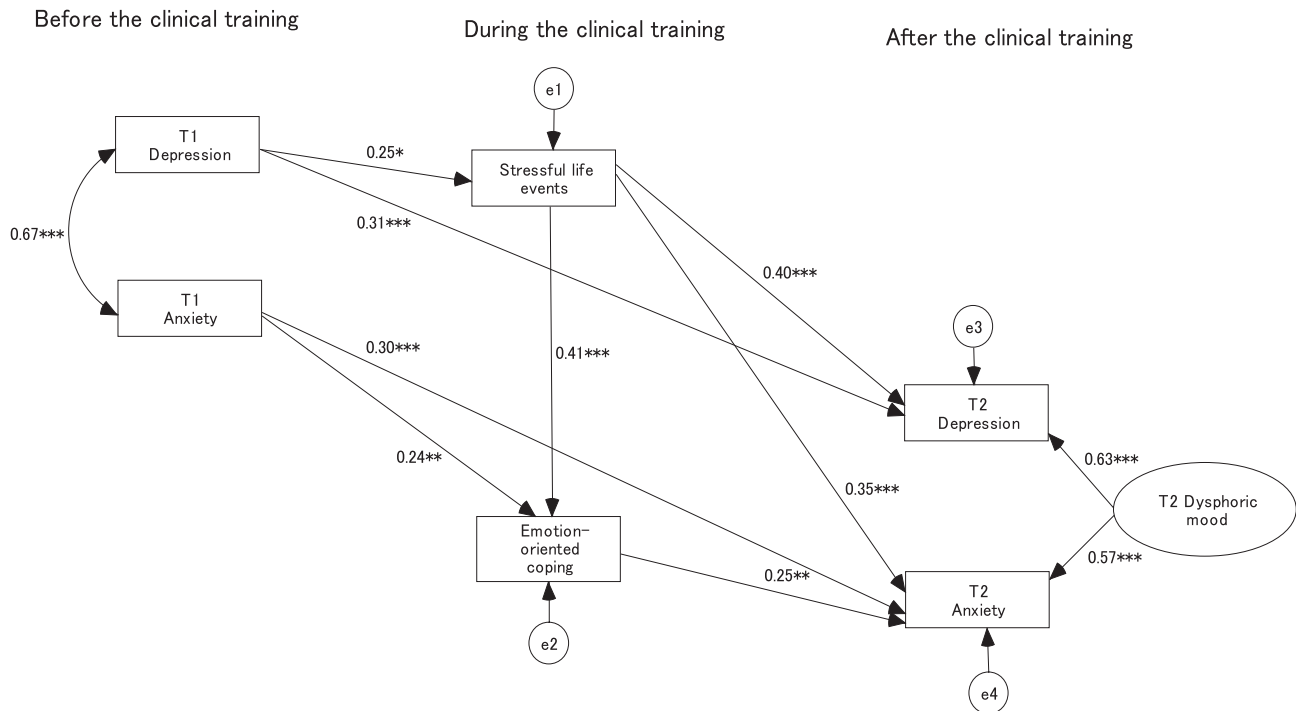


Figure 1. The path model predicting depression and anxiety. Model showing standardized path coefficients of the variables. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$. T1, before the clinical training; T2, after the clinical training.

From these results, a path analytical model was tested. Because neither task-oriented nor avoidance-oriented copings were correlated to the T2 HADS-D and HADS-A, these two variables were excluded from the model. Because of a substantial variance shared by HADS-D and HADS-A in Pearson correlations (Table 1), we speculated a factor reflecting dysphoric mood and posited a covariance between T1 HADS-D and T1 HADS-A and an unobserved variable linking to both T2 HADS-D and T2 HADS-A. The original default model was rejected and the model was improved by deleting paths with no significant standard regression weights. According to the final path model (Fig. 1), as expected, T2 HADS-D and HADS-A were predicted by each counterpart at T1. Stressful life events predicted both T2 HADS-D and HADS-A. T2 HADS-A but not T2 HADS-D was predicted by emotion-oriented coping. Emotion-oriented coping was predicted by stressful life events. Finally, T1 HADS-D predicted stressful life events whereas T1 HADS-A predicted emotion-oriented coping. All these path coefficients were significant ($P < 0.001$ to $P < 0.05$). Indices of overall model fit were excellent for this model (CMIN/DF = 0.668; $P = 0.648$; GFI = 0.989; AGFI = 0.953; CFI = 1.000; RMSEA = 0.000).

The degree of improvement was examined by AIC, which was 42.00 for the original model and 35.34 for the final model.

DISCUSSION

The present study has demonstrated that whereas stressful life events predicted both depression and anxiety, emotion-oriented coping style could predict anxiety in nursing students. Despite a robust covariance between depression and anxiety at the same time, these two types of dysphoric mood still showed different links with other variables. Our results have shown that depression and anxiety were not predicted by the other type of dysphoric mood 6 months previously but only by the same type of mood. This suggests that depression and anxiety, although sharing a substantial covariance, are independent phenomena across time. Although it is emotion-oriented coping that was reported most related to psychological maladjustment in previous studies, few studies have paid attention to the differential effects of such coping on depression and anxiety or interaction between coping and stressful life events. The link between emotion-oriented coping style and depression reported previously might be explained by confounding by the association between such

coping style and *anxiety* that shares a significant variance with depression.

Of another interest found in this study is the finding that the impact of stressful events was predicted only by depression 6 months previously. It might be either that only those students high in depression induce stressful life events or that only those depressive students perceive life events more adverse. The former assumption might be supported by empirical reports that negative life events are 'induced' by people with such personality traits as neuroticism.^{28,29} Because these personality traits are often associated with depression, the occurrence of stressful life events might be more likely among those with depression.³⁰ The latter assumption might be supported by tendency to search causes for depressive mood.³¹

It might be possible to intervene in the nursing students with psychological maladjustment to decrease emotion-oriented coping through cognitive therapy³² or other approaches.^{33–35} It might also be useful to increase students' awareness of the style of coping to which they are most vulnerable, as a step towards decreasing their frequency or developing coping skills for reducing their negative impact. Prevention might be available through psychoeducational programmes. Furthermore, such students who are mildly depressed or anxious before the commencement of clinical trainings might benefit from psychological intervention regarding how to cope with difficulties they might encounter during the training.

The current study has several limitations. First, the small sample size limited our power to find relationships among the variables. Moreover, only 62% of the eligible students were used for analyses. Two universities were approached because we had access towards them. There is no evidence to support that the students in these universities are representative of Japanese nursing students. Thus, the present data need caution before being generalized.

Second, we could not assess the effects of gender, because only female students were used for analyses. It was reported the relation between gender differences in the rates of exposure to stressful life events and sensitivity to their depressogenic effects.¹⁷ Men and women might respond to a similar type of adversities using different coping styles. The link between stressful life events and coping styles might also be different between the two genders.

Although the psychometric properties of the Japanese versions of the HADS and the CISS were well documented, those of life events need further investigation. We asked only in a single item the impact of negative life events. In epidemiology, life events are often measured by counting the number of specified life events, which are weighted according to either predetermined coefficients³⁶ or situation-specific contextual threat.³⁷ Nevertheless, subjective distress is known to be more strongly correlated with psychological symptoms than the number of events happening or the weighted objective impacts of the events.^{38,39} Major life events such as death of a loved one and financial loss are very unlikely to occur during the clinical training. Hence, we used a single item to assess the subjective impact of stressful life events.

In conclusion, the results of this study highlight the significant roles that emotion-oriented coping and stressful life events play in determining depression and anxiety in nursing students. These findings might explain the trait that is more likely to result in depression and anxiety according to emotion-oriented coping and stressful life events. They also suggest importance of mental health care of nursing students before and during clinical training.

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