

## Effects of self-monitoring of nursing students on Anxiety or Self-efficacy in practical training

Michiyo ANDO<sup>1)</sup>

(Received September 30, 2003 ; Accepted December 26, 2003)

**Abstract :** The present study investigated whether General Self-efficacy increases and Anxiety decreases in practical training when a teacher promotes students' self-monitoring as a special intervention, and how the students' emotion change. Nineteen female students in the second year of a University completed the STAI to measure their State-anxiety and (General) Self-efficacy scale before and after practical training. They also wrote daily notes consisting of Events, Emotion, Thinking, and Coping for 5 days. Then a teacher gave advice to each student collaboratively. Only description about Emotion was categorized qualitatively. Results showed that scores about Self-efficacy increased and Anxiety decreased after practical training. Their emotions were categorized into 5 groups, and "Feeling of success regarding student's care," and "Feeling of failure regarding student's care" had changed during practical training. Results that students' self-monitoring with teacher's assistance increased student's Self-efficacy and decreased State-anxiety suggest that self-monitoring by writing and collaborating with teachers is effective in practical training. Support for their feelings of failure in providing care regarding fundamental or professional nursing skills and communication skills by the teacher may promote fundamental nursing training.

**Key words :** Self-efficacy, cognitive therapy, self-monitoring, anxiety

### Introduction

Fundamental nursing practice is the first practice for nursing students. It is very important for them what they learn in the practice since their first impression or emotion make image for their work. Though nursing students learn many things such as nursing skills or communication skills in practical training, they often have anxiety which inhibit their motivation. It is important for teachers to create teaching methods to decrease their Anxiety and increase students' motivation to promote the effects of education. One of the methods of decreasing student's Anxiety and promoting the effects of education is to introduce skills of psychological therapy (cognitive therapy) in practical training.

Cognitive therapy was developed by Beck<sup>1)</sup> and it has been adopted in many situations such as health

promotion or patient's education for chronic illness. The foundation of this therapy is based on stress theory. Lazarus and Folkman<sup>2)</sup> demonstrated that cognition of stress influences the patients' behavior. In cognitive therapy, when people receive stress, the patients' behavior or emotion results from patients' interpretation of stress. In this therapy, thinking (recognition), emotion, and behavior were the main factors; emotion, thinking, or behavior is seemed to be result of recognition.

In the cognitive therapy, Self-efficacy is another important factor that influences the effects of therapy. Self-efficacy is defined as behavior that reflects a person's thinking or emotion, and it seems to involve two categories: one is General Self-efficacy and another is particular Self-efficacy. Sasaki, Kadowaki, Fukui, Takeshita, & Ikeuchi<sup>3)</sup> showed that Self-

---

<sup>1)</sup>Gunma University, School of Health Sciences, Maebashi Gunma, Japan, 371-8514

efficacy about maternal nursing area (particular Self-efficacy) increased even when teachers did not provide special any intervention, but General Self-efficacy did not increase. However, it is possibility that General Self-efficacy may increase in practical training if a teacher provides a special intervention adopting cognitive therapy in practical training.

Self-efficacy of nursing students in practical training is important for them to become registered nurses in the near future and it has effects to all of students' live. Then we use Self-efficacy is an indicator of the effects of education.

In the cognitive therapy, self-monitoring by writing about an event, emotion regarding the event or thinking regarding the event is one of the skills. This skill is usually useful for clients to look back at their thinking, cognition, or behavior consciously. Moreover, Inoue<sup>4)</sup> showed the importance of a client's collaboration with a counselor in cognitive therapy to confirm clients' writing.

Then, we hypothesized that nursing students' Self-efficacy during practical training will be promoted by writing and talking collaboratively with a teacher. Thus, we investigated whether students' Anxiety would decrease and Self-efficacy increase in comparison to that in the study by Sasaki et al.<sup>3)</sup> Moreover, to determine what type of support is more useful for students, we investigate students' series of cognition: when an event happens, which kinds of emotion, thinking (cognition), or behavior they have. In the present study, we analyzed only emotion because emotion is the most important factors of all. Writing down events, emotion, and thinking sequentially, and talking about care collaboratively is very new idea to support students' mental health and to promote their practice.

### **Purpose**

The present study investigated whether 1) (General) Self-efficacy increases and Anxiety decreases in practical training when a teacher promotes the student's self-monitoring using special intervention, 2) how Self-efficacy relates to anxiety, 3) how student's emotions change to understand their learning process and to consider methods of teacher's support.

### **Method**

**Participants-** Nineteen female students in the second year of a University in Japan.

**Questionnaires-** 1) The STAI<sup>5)</sup> was used to measure each student's state anxiety. Though this measure includes both Trait-anxiety and State-anxiety, the present study used only State anxiety (we call Anxiety simply) because the duration of nursing training in the hospital was only 5 days. They responded "Yes" or "No" to each item. 2) (General) Self-efficacy Scale<sup>6)</sup> was used to measure students' Self-efficacy. This scale included 16 items consisting of three factors. Students responded "Yes" or "No" to each item. "Yes" was scored 1 point, while "No" was scored 0 point. 3) They completed the daily note which consisted of events, emotion, thinking, and coping. They reviewed the most impressive event every day, and described their emotions, thinking during that event, behavior, and new coping for the future.

### **Procedure**

Although the duration of practical training for the fundamental nursing course was two weeks, students went to the hospital for practical training for 5 days. They studied fundamental knowledge such as function of hospital or method of communication in school. When one of the teachers, who was also a researcher in this study, announced this investigation to the students, nineteen students volunteered to participate. When participants reached the hospital on the first day, they completed the STAI and Self-efficacy scale. Practical training in the hospital continued for 5 days. They provided care for a patient while supervised by a registered nurse giving guidance in fundamental skills such as washing the patient's hair, preparing injections, or giving a bath. They also completed the daily notes. A teacher gave advice on the notes every day to encourage the development of student's self-monitoring. Sometimes the teacher talked collaboratively with students about patient care procedure. On the last day of practical training, students completed both the STAI and Self-efficacy scale.

### **Method of analysis**

T-test was used to analyze scores of Anxiety and Self-efficacy separately in order to measure the effects of collaborative self-monitoring. We confirmed

that t-test could be used because there was not significant difference between variance of before and after trainings by  $\chi^2$  test. To understand relationship between Anxiety and Self-efficacy, correlation analysis was conducted between these scores.

To analyze students' emotion, a method of qualitative data analysis was used. Although there were some factors in daily notes which students wrote, only emotion was analyzed because emotion is thought to be the most important factor in cognitive therapy. We referred to Funashima<sup>7)</sup> which is based on Berelson. First, sentences including emotion were divided into short sentences by context. Short sentences that contained only one emotional meaning were identified by a code. Then similar codes were summed into a sub-category, and finally sub-categories were summed into a category. For example, first, "I was glad when patients thanked of me" and "I was glad when patients agreed with my care proposal" were abstracted as codes from long sentences. Next, these sentences were abstracted into "Pleasure from trial care" as a sub-category. Connecting a sentence "Pleasure from trial care" with another "Feelings of failure from trial care" of sub-categories made a category of "Feelings of success or failure as a novice." We categorized by two researchers collaboratively to increase reliability. Also, we confirmed validity of these categories since they were similar with components of nursing students' stress by Tsutsumi.<sup>8,9)</sup> In this way, we summed the responses as shown in Figure 1.

## Result

### *Self-efficacy and Anxiety*

Table 1 shows scores of Anxiety and Self-efficacy before and after practical training. The score of 48 of Anxiety before practical training is high since cut-off point is 42. However, the score of 38.21 after training is standard. On the other hand, the score of 7.68 of Self-efficacy before training is standard and 9.26 is high by the criteria (0-1: low, 2-4: a little low, 5-8: standard, 9-11: a little high, 12-16:high). Anxiety scores decreased and the score for Self-efficacy increased after practical training.

Table 2 shows the Pearson's correlation coefficients between Anxiety and Self-efficacy before and after practical training. Correlation coefficient before practical training was significant, but that after practical training was not significant. Moreover, Scores of Self-efficacy of two students was very low even after practical training.

### *Changing process of emotion*

Figure 1 shows the changing process of emotion about Categories over the 5 days. There are two main themes that always changed about feelings of "Success" or "Failure". Other themes involved "Negative feeling for registered nurse", "Powerlessness of students" and "Sadness in parting."

## Discussion

### *Anxiety and Self-efficacy*

Students' self-monitoring with the teacher increased students' Self-efficacy and decreased

**Table 1** Scores of State-anxiety and Self-efficacy before and after practical training

	Before	After	p value	
State-anxiety	48.05 (high)	38.21 (standard)	p< .001	cut of point: 42
Self-efficacy	7.68 (standard)	9.26 (high)	p< .01	minimum: 0 maximum:16

(n=19)

**Table 2** Correlation coefficients between State-Anxiety and Self-efficacy before and after practical training

practical training	Correlation coefficients	p value
Before practical training	-.46	p< .05
After practical training	.03	n.s.

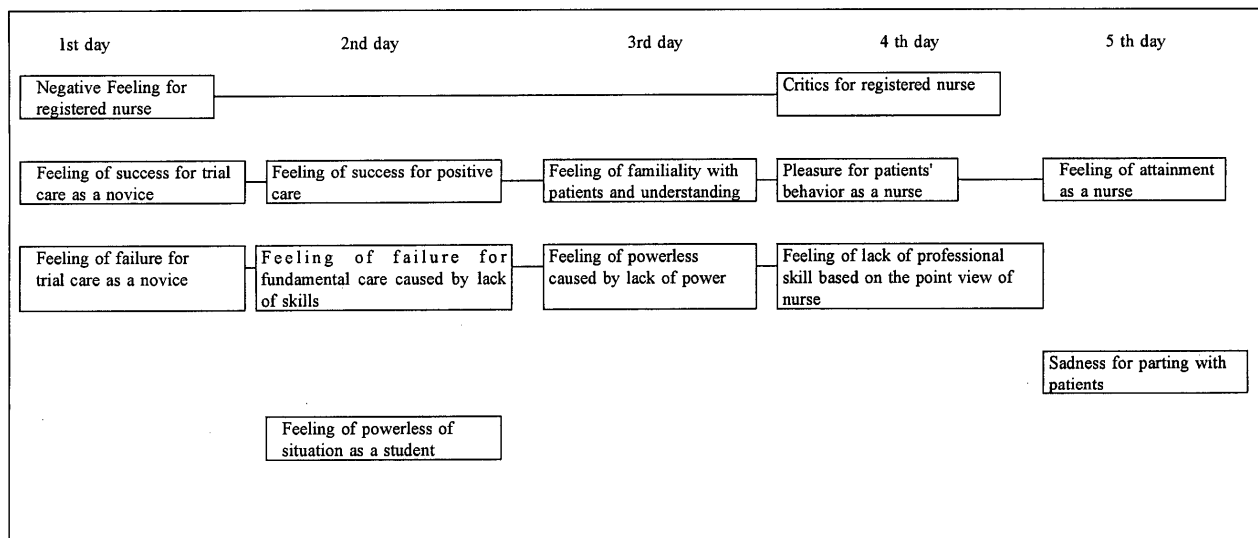


Figure 1 Process of students' emotion during fundamental nursing practice

Anxiety. These results support the hypothesis that intervention using collaborative self-monitoring in practical training decreases Anxiety and increases Self-efficacy. Although there is a difference in practicing field, since professional maternal area in Sasaki, et al.<sup>3)</sup> includes fundamental nursing skills, we can compare these studies. When there was no particular intervention in practical training<sup>3)</sup>, students' General Self-efficacy did not increase. However, when there was a special intervention, Self-efficacy increased. This demonstrates the effects of this intervention for General Self-efficacy. To assure the effects of this intervention, for the future, we should investigate both General Self-efficacy and particular Self-efficacy in various areas in practical nursing area because the nature of knowledge or skills in various areas is different.

In previous studies, Tresolini and Stritter<sup>10)</sup> showed that Particular Self-efficacy increased accompanied with the student's grade in school. That is, when students experience considerable training, they developed high Self-efficacy. Chacko and Huba<sup>11)</sup> found a factor that affected self-efficacy of first-year nursing student. They mainly investigated school records, not practical trainings. After analyzing the relation among Self-efficacy, school records, language ability, and mathematic ability and so on, results showed that Self-efficacy related to language ability, motivation, and concentration or preparation for class. As for the present study, since we did not

investigate which factors affected students' Self-efficacy in practical training or whether Self-efficacy increase accompanied training duration, further research will be needed about these points.

As for the relation between Self-efficacy and Anxiety in the present study, although Self-efficacy related to Anxiety before practical training, there was no relation after practical training. This is why since the range of Scores of Anxiety was wide (23-47) and some of them still have low Self-efficacy even after training. That is, some students have unresolved questions in the practical training.

#### *Changing process of Emotion*

Then, what kinds of unresolved problems nursing students had? To understand this point, we can understand from analysis of emotions and find helpful support. There are few studies investigating Self-efficacy for practical training from students' perspective.

About feelings of Success, students initially have "Feelings of success in providing trial care as a novice." They tried to provide patients care mostly based on knowledge as a novice. They did not use data about the patient. During trial care, they gain familiarity with patients, collected data about the patient, and provide care based on knowledge. While successfully providing care, students can enjoy the patient's behaviors as a nurse. Lastly, students feel attainment. It seems that the most important point is to think about suitable care for the patient for

themselves based on subjective or objective data and to interact with patients. To obtain patients' subjective data and understand them, communication skill is also important.

About negative feelings, their feeling changed from "Feeling of failure in providing trial care as a novice," "Feeling of failure in providing fundamental care caused by lack of skills," "Feeling of powerlessness caused by poor skills," to "Feeling of lack of professional skills from perspective of the nurse." Their feelings changed from a perspective of a novice to that of a professional. It is clear that students want to try to care for patients, but do not find concrete methods of providing care or to adapt fundamental care procedure to the clinical situation as a nurse. It is important for the teacher to give advice or suggestions for concrete skills from perspective of a professional.

Also, advice about limitation as a student will be useful because students feel powerless and feel sadness in leaving patients on the last day of practical training. Moreover, one of the students took care of a terminal patients and the patient was dead during practical training. The student was very disappointed. After practical training, she said, "I am not suitable for a nurse because I can not feel anything now even though that patient was dead and I do not have sense of mourning." It seems important that what emotion students feel in practical training and how they cope for future study. Moreover, we should investigate if these students' learning process is the same process in which a nurse becomes from novice to expert<sup>12)</sup>.

Although we did not investigate the relation among emotion, thinking, and behavior, there may be relations among these categories. For example, when a student feel powerless about providing care and does not know what to do, her motivation or Self-efficacy will decrease during training and she will loose hope. Moreover, beliefs of students may affect their Anxiety or Self-efficacy such as indication by Evans and Picano<sup>13)</sup>. Clarification of particular beliefs among nursing students will be required in the future.

And we should investigate effects of intervention when they finish professional practice in the 4<sup>th</sup> grade, such that whether their image of first practice change or not.

On the other hand, interaction between students and teacher will be examined more over.

## Reference

- 1) Beck, A.T. Cognitive therapy and emotional disorders. International University Press, 1976.
- 2) Lazarus, R.S. & Folkman, S. Stress, Appraisal and Coping. New York: Springer, 1984.
- 3) Sasaki, K., Kadowaki, C., Fukui Takeshita, Y., & Ikeuchi, K. Effects of Studies in the school before practical training on self-efficacy. Proceeding of Japan Human Care Conference, 2002.
- 4) Inoue, K. Invitation to Cognitive Therapy. Tokyo: Kinpodo, 2002.
- 5) Spielberger, C.D., Gorusch, R.L., & Lushene, R.E. STAI Manual for the State-Trait Anxiety Inventory. California: Consulting Psychologist Press, 1970.
- 6) Sakano, Y., & Tojyo, H. A trial of making Ordinary Self-Efficacy Scale. Behavioral Therapy Res 1986; 12: 73-82.
- 7) Funashima, N. Challenge for quality data. Tokyo: Igakushoin, 2000.
- 8) Tsutsumi, Y. The development of Revised edition of pagana's clinical stress questionnaire for Japanes. J of Japanese Society of Nur Res 1994; 17: 17-26.
- 9) Tsutsumi, Y. A study on the changing process of stressful emotion during clinical practice of nursing students. J of Japanese Society of Nur res 1994; 17: 27-38.
- 10) Tresolini, C., & Stritter, F. An analysis of learning experiences contributing to medical student's self-efficacy in conducting patient education for health promotion. Teaching and Learning in Medicine 1994; 6: 247-254.
- 11) Chacko, S.B., & Huba, M.E. Academic achievement among undergraduate nursing students: the development and testing of a causal model. J Nur Edu 1991; 30: 267-273.
- 12) Benner, P. From novice to expert: excellence and power in clinical nursing practice. Addison-Wesley Pub, 1984.
- 13) Evans, R. M. & Picano, J. J. Relationship of irrational beliefs to self-report indices of psychopathology. Psychological Report 1984; 55: 545-546.