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Determination of the levels of anxiety of students taking classes with two different methods during their operating room clinical practice

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Abstract

This descriptive study was conducted for the purpose of determining the level of state-trait anxiety in students taking classes with two different methods during their operating room clinical practice. The research population was the students taking the Surgical Nursing class in a Nursing School in Turkey. The research data were collected using a questionnaire form, and the State-Trait Anxiety Inventory. The forms were used twice, once before and once after the operating room clinical rotation. There was no statistically significant difference found between the means of the two groups' state and trait anxiety scores. The educational method did not affect the students' levels of anxiety in their operating room clinical practice.

Keywords: Student nurse, operating room practice, anxiety, state-trait anxiety.

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1. Introduction

The operating room is different from other clinical areas with respect to its work system and equipment and operating room nursing is a special area. The operating room is a highly specialized environment and has potential for teaching and learning of student nurses. The operating room is one of the most specialized and important clinical learning environments for student nurses to learn operating room skills.

However, due to the intensity and urgency with which some of the activities are performed, student nurses could sometimes feel threatened and not able to appreciate the operating theatre as a clinical learning environment. It has been reported in the literature that the stressors in the operating room environment are more intense than in other clinical areas and that nurses are constantly facing stress because of the physical environment, interpersonal relationships and intense work hours (Koc 2005; Peyrovi, Yadavar-Nikraves, Oskouie & Bertero, 2005; Sundler, 2014). The students who have their clinical practice in the operating room enter a new environment that they are not used to. The operating room environment that is full of unknowns for nursing students is the cause for many problems such as worry, lack of confidence and stress (Ozbayir, Celik & Dramali, 2001; Peyrovi et al., 2005; Koc 2005). When nursing students enter the operating room they verbalize their fear as anxiety. Students who have excessive fear and anxiety will experience difficulty adapting to the operating room environment and in the clinical practice and interpersonal relationships (Mckay, Buen, Bohan & Maye; Sundler, 2014).

In addition because the operating room personnel saw the students as workforce they were not aware of what they were experiencing. Nursing students in this situation feel inadequate and are unable to acquire basic skills. Consequently this situation decreases performance in clinical practice and interferes with learning (Mckay et al., 2010; Sundler, 2014). For this reason it is necessary for nurse educators to know the students' predisposition to anxiety and their concerns. Several studies have been conducted with nursing students in Turkey on their level of anxiety in clinical practice and their levels of perception and expectations about the operating room clinical practice. However no studies have been found on the relationship between educational methods and anxiety during operating room clinical practice.

2. Material and Method

2.1. Purpose

The aim of this study was to determine the level of state-trait anxiety in the operating room clinical practice for students taking classes using two different teaching methods.

2.2. Study design

The study used a descriptive, cross-sectional and comparative research design.

2.3. Study area

The study was carried out with students attending to the Health Higher School of a university in a city in Black Sea region.

2.4. Sampling

The study was carried out with students attending to the Health Higher School of a university in a city in Black Sea region in 2009-2010 and 2010-2011 academic year. The students who received the surgical nursing course in spring term, 2009-2010 academic years, made up the control group (47

students), whereas those who received it in spring term 2010-2011 academic years constituted the experimental group (43 students).

2.5. Data collection tools

Research data were collected using a questionnaire form and on the State-Trait Anxiety Inventory (STAI). The questionnaire form was prepared by the researcher based on information in the literature and had 24 questions. The questionnaire form were in two sections; the first section on the form contained questions about the students' descriptive characteristics and the second section had questions about their feelings about operating room clinical practice.

The students' level of anxiety was measured using the STAI developed by Spielberger et al. (1979) and adapted for Turkey by N. Oner and A. Le Compte (1977) with validity and reliability studies. This Likert type tool for state anxiety has choices, "not at all, somewhat, moderately so, and very much so," and the trait anxiety inventory has choices, "almost never, sometimes, often, and almost always" (Oner & Le Compte, 1983). The total score for the subscales can vary between 20 and 80. A high score shows a high level of anxiety (Oner & Le Compte, 1983).

2.6. Implementation of the study

While the control group received training on perioperative nursing care with question and answer method, the traditional lecturing method (TLM), the experimental group carried out the course with the Six Thinking Hats Method (STHM), an active teaching method. The students in both groups were watched a video film made by the instructor introducing the operating room environment and the surgical aseptic technique. The students in both groups was practiced the surgical aseptic technique. The forms used in the study were completed by the students twice, once before their operating room clinical practice and then the second time afterwards and took an average of 15 – 20 minutes to complete.

The Six Thinking Hats Activity was developed by Edward De Bono in 1985 is a creative problem solving activity for developing students' cognitive skills. The hats are used as a symbol for thinking perspectives. As the color of the hats change at regular intervals it is expected that the perspective represented by the color will be transferred. The six hats used in the practice represent the following perspectives:

White hat (objective hat): This hat includes information, data and facts. It aims to assess the available information, present the necessary information and direct the relevant questions.

Yellow hat (advantages hat): Yellow hat calls for discovering the value, benefits and positives of the proposals made while brain-storming.

Black hat (pessimistic hat): This draws attention to dangers. It reveals the risks and shows why something does not work.

Red hat (emotional hat): It gives an emotional perspective. When using this hat, one gets the chance to express feelings and intuition without any rationale.

Green hat (creativity hat): When thinking with this hat, one puts forward proposals, new concepts and choices. The green hat gives the opportunity to capture various possibilities. Discusses nursing care given to surgical patient.

Blue had (evaluation hat): This hat is directly used to manage the thinking process itself. It can be used to sequence the hats used and summarize the obtained results, too. The blue hat also helps observe the thinking process and ensure the rules of the game. In addition, it can be used to stop the discussion and establish the discipline (De Bono 1997, Karadag, Saritas & Erginer, 2009; Karadag, Pekin & Etikan 2014).

2.7. Data collection and analysis

The answers to the open-ended questions on the form (feelings about operating room clinical rotation, difficulties experienced in the operating room, procedures they did, etc.) were put into groups by hand by the researcher and evaluated on the computer. Descriptive statistics, Test for Significance between Two Means in the comparison of the two groups, and Test of Significance between Two Equals and Chi square test were used in the analysis of the data.

2.8. Ethical and legal aspects of the study

Official permission was taken from Gaziosmanpasa University Ethical Committee for the study. In addition, written permission was taken from Health Higher School Administration, where the study was conducted. Apart from this, written consent of higher health school students was also taken.

3. Findings

No statistically significant difference was found between the socio demographic characteristics of the students in the experimental and control groups. This is evidence of the similarity between the students in the control and experimental groups.

Table 1. Distribution of the feelings stated by students during their operating room clinical practice

Feelings Stated	Experimental		Control	
	n	%	n	%
Fear of the unknown	21	48.8	10	21.2
stress, curiosity and excitement	8	18.6	19	40.4
Joy and excitement	6	14.0	5	10.6
Calm and Confident	5	11.6	8	17.0
Feeling faint	2	4.7	4	8.5
No answer	1	2.3	1	2.1
Total	43	100	47	100

When the distribution of the students' statements about their feelings during their operating room clinical practice were evaluated it was seen that 48.8% (n=21) of the experimental group experienced fear of the unknown, 18.6% (n=8) experienced some stress, curiosity and excitement, and 14.0% (n=6) experienced joy and excitement. The distribution of the statements by the students in the control group were that 40.4% (n=19) experienced some stress, curiosity and excitement, 21.2% (n=10) fear of the unknown, and 17% (n=8) stated that they felt calm and confident (Table 1).

Table 2. Distribution of difficulties experienced by students during operating room clinical practice

Difficulties Stated	Experimental		Control	
	n	%	n	%
Fear of making a mistake	10	23.3	3	6.4
Physically uncomfortable (nausea, dizziness, tiredness)	8	18.6	6	12.8
Finding the incision procedure to be traumatic	7	16.3	7	14.9
Difficulties not experienced because of being an observer	6	14.0	13	27.7
Disappointed for not being able to participate in surgery because of sterility	5	11.6	8	17.0
Personnel not being accepting and supportive (shouting, not allowing to ask questions, etc.)	5	11.6	4	8.5
No answer	2	4.7	6	12.8
Total	43	100	47	100

In the examination of the distribution of difficulties experienced by students during the operating room clinical practice it was determined that 23.3% (n=10) of the experimental group had a fear of making a mistake, 18.6% (n=8) had physical discomforts such as nausea and dizziness, and 16.3% (n=7) found the incision procedure to be traumatic. In the control group 27.7% (n=13) of the students stated that they did not have any difficulties because they were observers, 17.0% (n=8) were disappointed for not being able to participate in surgery because of sterility, and 14.9% (n=7) found the incision procedure to be traumatic (Table 2).

Table 3. Distributions of procedures done by students during operating room clinical practice

Procedures Done	Experimental		Control	
	n	%	n	%
Helped the circulating nurse with activities	18	41.9	13	27.7
Helped the scrub nurse with activities	17	39.5	-	-
Just observed	5	11.6	25	53.2
Help with other procedures (Intubation, patient preparation, etc.)	3	7.0	4	8.5
No answer	-	-	4	8.5
Total	43	100.0	47	100.0

According to the Table 3 it was determined that 41.9% (n=18) of the experimental group helped the circulating nurse with her activities, 39.5% (n=17) helped the scrub nurse with her activities, but 53.2% (n=25) of the control group were observers and did not participate in any procedures, 27.7% (n=13) helped the circulating nurse with her activities, and none of the students helped the scrub nurse with her activities. Stated another way 35 of the 43 students (81.4%) in the experimental group participated in the nursing activities, but only 13 of the 47 students (27.7%) in the control group participated in the nursing activities but none helped the scrub nurse with her activities (Table 3).

Table 4. Comparison of students' state anxiety score means before and after operating room clinical practice

State Anxiety Score	Experimental	Control	t	p
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Mean				
Before Clinical Practice	39.16±10.41	37.87±8.68	0.64	0.524
	35.46±8.34	38.12±8.57	1.49	0.140
After Clinical Practice	t=2.08 0.044	p= 0.849	t= 0.191	p=

In the examination of the students' State Anxiety Score means before and after operating room clinical practice it was seen that the experimental group's preclinical State Anxiety Score mean was 39.16 ± 10.41 (min= 21, max= 59), postclinical was 35.46 ± 8.34 (min= 20, max= 59), and control group's preclinical State Anxiety Score mean was 37.87 ± 8.68 (min= 20, max= 59), postclinical was 38.12 ± 8.57 (min= 21, max= 59). A statistically significant difference was found in the pre and post clinical state anxiety score means for the experimental group ($t= 2.08$, $p= 0.044$), but no statistically significant difference was found in the pre and post clinical state anxiety score means for control group ($t= 0.191$, $p= 0.849$). There was no statistically significant difference between experimental and control groups' pre and post clinical state anxiety score means ($t=2.08$ $p= 0.044$; $t= 0.191$ $p= 0.849$).

Table 5. Comparison of students' trait anxiety score means before and after operating room clinical practice

Trait Anxiety Score Mean	Experimental	Control	t	p
Before Clinical Practice	43.97±8.22	43.68 ± 8.34	1.69	0.86
After Clinical Practice	41.55±6.81 t=3.33 p= 0.002	44.70±8.38 t= 1.67 p= 0.100	1.94	0.056

The students Trait Anxiety Score means pre and post clinical were examined in Table 5 and it was seen that experimental group's preclinical Trait Anxiety Score mean was 43.978 ± 8.22 (min=27, max=59), post clinical was 41.55 ± 6.81 (min=26, max=59), and control group's preclinical Trait Anxiety Score mean was 43.68 ± 8.34 (min=27, max=65), post clinical was 44.70 ± 8.38 (min=28, max=65). A statistically significant difference was found between the experimental group's preclinical and post clinical Trait Anxiety Score means ($t=3.33$, $p=0.002$), but not between the control group's preclinical and post clinical Trait Anxiety Score means ($t= 1.67$, $p= 0.100$). There was no statistically significant difference between experimental and control groups' pre and post clinical trait anxiety score means ($t=1.69$, $p= 0.86$; $t= 1.94$, $p= 0.056$) (Table 5).

4. Discussion

Managing stress for student nurse anesthetists represents a multifaceted educational concern for nursing educators. This study was conducted for the purpose of determining the level of state and trait anxiety of students taking classes with different methods in the operating room clinical rotation. There was not a significant difference between the experimental and control groups in terms of their informative features ($p>0,05$).

It was determined in the study that before the operating room clinical practice the experimental group had a fear of the unknown, experienced some stress, curiosity and excitement, but control group experienced some stress, curiosity and excitement and a fear of the unknown. Bayar, Celik and Dramalı (2001) found that 46.3% of students experience fear and nervousness the first time they enter the operating room for clinical practice because it was a different environment. When the related

literature was reviewed, it was observed that the findings of Sanders 2002, Sarid 2004, Bayar et al 2009, Mckay et al 2010, and Sundler et al 2014, were similar to the findings of the current study.

In spite of the students having learned theoretically what to expect from a hospital environment that they had not seen before and having watched a video film they still felt fear because they had not experienced it before. Consequently we were able to conclude that STHM and TLM did not have an effect on the feelings experienced by students before the clinical practice.

The experimental group students' fear of making a mistake and physical complaints such as dizziness being experienced more than the classic education group students may be the reason why they were not able to participate more in nursing activities. In the same way because the control group students did not participate in nursing activities because they were observers they experienced disappointment.

Research results have shown that students have greater needs for help in practice area and they feel they need to be supported (Koc 2005; Sheu, Lin & Hwang, 2002; Sirin, Kavlak & Ertem, 2003; Bayar, Celik & Dramali, 2001). In this context it is clear that in clinical education the understanding and tolerance shown to students by healthy/ill individuals, teaching staff, nurses and other health care personnel has an important place in the students not being denied adapting to the practice environment.

Although the difference in the pre and post clinical state anxiety score means between the experimental and control groups was not found to be statistically significant ($t= 0.64$, $p= 0.524$; $t= 1.49$, $p= 0.140$), the active education group's preclinical state anxiety score mean was slightly higher than the classic education group. This finding may be a result of experimental group students having participated actively in learning so they were more aware and perceived their stressors more intensely. The reason why the control group had higher post clinical state anxiety levels than their preclinical levels may be because they did not participate in many nursing activities and were disappointed that they were only observers and were not able to dress in sterile attire for the operating room which may have increased their state anxiety level.

We conclude that the creative thinking method, Six Thinking Hats Activity, and showing the video film of the operating room environment did not have an effect on the level of anxiety experienced by students in clinical practice. Six Thinking Hats Activity as active learning methods may support students taking responsibility for their learning but may not effect anxiety experienced during clinical practice.

5. Conclusion

The conclusion was reached that a creative thinking method, Six Thinking Hats Activity, used in classroom instruction and the students' watching a video film showing the operating room environment supported the students assuming responsibility for their education but did not have an effect on the level of anxiety they experienced. There is a need for future research with broader scope that compares the various factors causing anxiety in clinical practice which takes into consideration the knowledge that anxiety is not the only factor affecting psychomotor performance and that there can be many factors affecting anxiety.

In addition during the Six Thinking Hats Activity there were discussions in the Red Hat Activity about the positive feelings experienced about surgery (Red-Yellow) and negative feelings (Red-Black), and these feelings experienced by students before the operating room clinical practice were not considered. In particular, the effect of discussion clinical anxiety in the Six Thinking Hats Activity on the preclinical feelings experienced by the students' needs to be investigated and explained.

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