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Effects of the Balance Tapping Therapy on Dysmenorrhea and Premenstrual Syndrome

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Abstract

Background/Objectives: Dysmenorrhea and premenstrual syndrome (PMS) can effecton the women's quality of life. The purpose of this study was to identify effects of the balance taping therapy on dysmenorrhea and PMS. **Methods/Statistical Analysis:** This study was a pretest-posttest design with a nonequivalent control group. A total participants were 51 female university students, 26 female were assigned as an experimental group and 25 female were assigned as a control group. The experimental group received balance taping therapy and the control group received none. Data were analyzed by SPSS 20.0 win program using technical statistics, independent t-test, x^2test, and ANCOVA. **Findings:** The experimental group identify significant decrease in dysmenorrheal (F=16.50, p<.001) and PMS (F=11.04, p=.002) compared with the control group. The experimental group was lower level of dysmenorrheal (F=16.50, p<.001)and PMS (F=13.95, p<.001) than the control group. **Improvements/Applications:** The balance tapping therapy is an effective intervention for dysmenorrhea and PMS. Therefore, balance tapping therapy has proven to be an effective nursing intervention for dysmenorrhea and PMS.

Keywords: Balance Tapping Therapy, Dysmenorrhea, Premenstrual Syndrome

1. Introduction

Overall, a great number of women suffer from menstrual symptoms[1], dysmenorrhea and premenstrual syndrome (PMS) are the two most prevalent among these symptoms[2,3].

Dysmenorrhea, defined as cramping pain in the lower abdomen or pelvis during menstruation[4], is the most common gynecologic problem for all ages and racial women[5]. One-third of women experienced moderate to severe pain, absent from school or work, interaction and participation are reduced[2]. Therefore, women who have dysmenorrhea are more often absent from their workplace and do worse in their studies than women who doesn't have dysmnorrhea[6]. Dysmenorrhea can be classified primary dysmenorrhea which does not have underlying pathology and secondary dysmenorrhea which have underlying pathologic cause such as endometriosis, adenomyosis, or uterine myoma[7]. In young women, most of dysmenorrhea is primary dysmenorrhea and women experiences pelvic or lower abdominal pain. Beside pain, some of them experienced other symptoms such as diarrhea, constipation, nausea, vomiting, migraine, dizziness, and fatigue[7]. For the treatment or pain relief of primary dysmenorrhea, various interventions has been suggested such as non-steroid anti-inflammatory drug (NSAID), combined oral contraceptive (COC) pill, acupressure, fish oil[6,7].

Premenstrual syndrome (PMS) is demonstrated by physical symptoms that appear during the luteal period of menstrual cycle and disappear within a few days of menstrual begining[8]. About a quarter of menstruating women experience mild to serious premenstrual symptoms enough to disrupt daily personal and school or occupational life and approximately 5% report severe symptoms[9,10]. The most common symptoms include fatigue, breast fullness, mood swings, lowered concentration, and withdrawal of usual activities[10]. The etiology of PMS is unkown[8], but it is suggested that abnormal

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responses of neurotransmitter to normal ovarian functions, hormonal imbalances, sodium retention, and nutritional deficiencies are related to PMS[11]. The treatments of PMS include pharmacologic and non-pharmacologic treatment. Because the etiology of PMS is unknown, the therapeutic goal of treatment for PMS is symptom alleviation and individualized treatment fitting the timing and severity of symptoms should be provided[8].

Dysmenorrhea and PMS can significantly effect the affected women's quality of life[12,13]. Therefore, the effective interventions should be provided for women suffering from dysmenorrhea and PMS. Interventions for dysmenorrheal and PMS include pharmacologic and non-pharmacologic intervention. More women favour non-pharmacologic treatments such as nutritional supplements, exercise, and alternativetherapy[11] and previous studies supports the effects of these non-pharmacologic interventions[14-16]. Among these interventions, balance taping therapy is an effective nursing intervention that reduces the pain of dysmenorrheal and PMS[17].

2. Purpose of the Study

The purpose of this study was to evaluate the effect of balance taping therapy on dysmenorrhea and PMS in female university student.

3. Research Method

3.1 Research Design

This study used a non-equivalent control group pretest-posttest design to determine the effect of balance taping therapy on dysmenorrhea and PMS.

4. Research Subjects

A total of 54 female university students who understood the purpose of this study and agreed the participation in this study were recruited. The inclusion criteria were as follows

1) Female students whose menstrual pain registered minimum VAS 5.0
2) Female students free from gynecological disorders
3) Female students who weren't receiving treatment or participating in program related to dysmenorrhea
4) Female students who weren't receiving treatment or participating in program related to PMS
5) Female student who never experienced autogenic training

Of 54 qualifying female students who were selected as research subjects, 27 of them were randomly assigned to experimental group and control group. Among them, 1 of experimental group and 2 of control group excluded due to dropping out and insufficient survey response. Therefore, total number of the research subjects was 51 with 26 in experiment group and 25 in control group.

5. Research Tools

1) Dysmenorrhea
Dysmenorrhea was measured using VAS(visual analogue scale), which indicates the degree of menstrual pain from 0 for 'no pain' to 10 points for 'severe pain'.

2) Premenstrual Syndrome
Premenstrual syndrome was measured using MDQ (menstrual distress questionnaire), which was developed by Moos (1968), revised by Kim (1998), and modified by Cho (2004). It is composed of 48 symptoms in 6 categories: 6 inconcentration, 9 in pain, 7 in behavioral change, 8 in digestive symptom, 10 in negative feeling, and 8 in physical symptom. Each question is designed to measure as 1 (none) to 5 (very severe), with higher points indicating severer premenstrual syndrome. The internal consistency reliability was Cronbach's a=.96 in the study by Cho (2004) and Cronbach's a=.97 in this study.

6. Research Implementation

The study proceeded from October to December, 2013, in the order of pretest, intervention, and posttest.

1) Pretest
Of all the female students who applied for participation in the study, those who met the inclusion criteria were provided with a description of the purpose and procedures of this study. After they were sufficiently informed that anonymity would be guaranteed regarding the results, there would be no disadvantages for nonparticipation in this study, and termination of the participation would be always an option even after their participation, they were provided with written informed consent form and a questionnaire for a pretest. If they agreed to participate in the study, they were instructed to sign the consent form and complete the questionnaire. The consent form and questionnaire were put in an envelope when submitting for preventing the exposure of study participation and ensuring the voluntary participation.

2) Intervention
The experimental group was provided with training on the balance taping therapy so that they could apply it

for four weeks. The balance taping therapy training was performed by a professional instructor and consisted of the way to apply and remove taping and precautions. One-on-one training was conducted on applying taping. Professional instructor explained the taping sites and demonstrated the application of taping, and then students practiced the application of taping. Instructor repeated explanation and demonstration for difficult part that student could not or hard to understand. Students repeated practice until they felt sure to do it by themselves.

3) Posttest
The posttest of experimental group was conducted after the balance taping therapy during four weeks and the control group was conducted four weeks after the pretest without special intervention. The posttest was conducted using the same questionnaire of pretest. Written questionnaire was also put in an envelope when submitting for preventing the exposure of survey results.

7. Data Analysis

The collected data were analyzed by SPSS 20.0 win program. Descriptive statistics for the general characteristics, independent t-test, X^2-test, and ANCOVA were determined significant differences between two groups.

8. Results

8.1 General Characteristics

The homogeneity of the general characteristics between two groups showed that there was no significant difference between the two groups in age, age of menarche, menstrual cycle, menstrual period, menstrual volume, the greatest pain period and part during menstruation (Table 1).

9. Dysmenorrhea and PMS

In the preliminary test of homogeneity, the experimental group was higher level than the control group (t=2.44, p=.019) in dysmenorrhea, while there were no significant difference between two groups in PMS (Table 2).

9.1 Changes in Dysmenorrhea and PMS

Because the experimental group was higher than the control group in the preliminary test of homogeneity, the ANOVA was used to compare dysmenorrhea and PMS to compare the changes between the two groups.

The experimental group showed a significant decrease compared to the control group of dysmenorrheal (F=16.50,

Table 1. General Characteristics

	Categories	Exp. (n=26)	Cont. (n=25)	x^2 or t	p
		n(%) or M±SD	n(%) or M±SD		
Age		20.62±1.44	19.92±1.04	1.98	.054
first menstruation age		12.96±1.56	13.36±1.29	-0.99	.326
Menstrual cycle		5.85±1.54	5.16±1.28	1.73	.091
Menstrual period		5.85±1.54	5.16±1.28	1.73	.091
Menstrual volume	Large	6 (23.1%)	5 (20.0%)	0.61	.739
	moderate	16 (61.5%)	14 (56.0%)		
	little	4 (15.4%)	6 (24.0%)		
Time of greatest pain during menstruation	Before 1/2days	4 (15.4%)	8 (32.0%)	6.15	.105
	First day	18 (69.2%)	11 (44.0%)		
	2/3days	4 (15.4%)	3 (12.0%)		
	else	0 (0.0%)	3 (12.0%)		
Body part in which the pain is greatest during menstruation	lower abdomen pain	19 (73.1%)	18 (72.0%)	1.09	.581
	back pain	7 (26.9%)	6 (24.0%)		
	else	0 (0.0%)	1 (4.0%)		

Table 2. Dysmenorrhea and Premenstrual syndrome

	Exp. (n=26)	Cont. (n=25)	t	*p*
	M±SD	M±SD		
Dysmenorrhea	7.36±0.90	6.72±0.99	2.44	.019
Premenstrual syndrome	130.15±22.68	130.48±25.65	-0.05	.962
Reduction of concentration	15.38±4.01	15.40±4.32	-0.01	.990
Pain	24.50±4.90	24.68±4.33	-0.14	.890
Behavioral disorders	16.54±3.96	17.52±4.45	-0.83	.409
Abnormal symptoms in digestive organs	24.00±4.65	22.92±4.41	0.85	.399
Mental and neural disorders	28.46±6.92	28.08±7.73	0.19	.853
Physical disorders	21.27±4.78	21.88±5.37	-0.43	.670

Table 3. Changes of Dysmenorrhea and Premenstrual syndrome

ANCOVA M±SD		Exp. (n=26)	Cont. (n=25)	t or F	*p*
		M±SD	M±SD		
Dysmenorrhea	pre-test	7.36±0.90	6.72±0.99	2.44	.019
	post-test	5.21±1.95	6.76±0.98	16.50	<.001
	changes	2.15±1.97	-0.04±1.06	16.50	<.001
Premenstrual syndrome	pre-test	130.15±22.68	130.48±25.65	-0.05	.962
	post-test	97.92±28.56	127.48±29.34	13.95	<.001
	changes	32.23±34.39	3.00±12.14	11.04	.002
Reduction of concentration	pre-test	15.38±4.01	15.40±4.32	-0.01	.990
	post-test	12.23±4.37	15.80±4.58	8.03	.007
	changes	3.15±4.84	-0.40±1.94	8.27	.006
Pain	pre-test	24.50±4.90	24.68±4.33	-0.14	.890
	post-test	18.00±4.91	24.08±5.35	19.87	<.001
	changes	6.50±6.81	0.60±3.89	9.88	.003
Behavioral disorders	pre-test	16.54±3.96	17.52±4.45	-0.83	.409
	post-test	12.46±4.50	17.28±5.37	10.65	.002
	changes	4.08±5.32	0.24±2.33	7.46	.009
Abnormal symptoms in digestive organs	pre-test	24.00±4.65	22.92±4.41	0.85	.399
	post-test	18.46±4.98	21.92±5.76	5.56	0.23
	changes	5.54±6.85	1.00±3.73	4.99	.030
Mental and neural disorders	pre-test	28.46±6.92	28.08±7.73	0.19	.853
	post-test	20.27±7.07	27.24±7.56	12.74	.001
	changes	8.19±7.64	0.84±2.90	13.91	.001
Physical disorders	pre-test	21.27±4.78	21.88±5.37	-0.43	.670
	post-test	16.50±5.66	21.16±5.43	10.24	.002
	changes	4.77±6.29	0.72±2.59	6.56	.014

p<.001) and PMS(F=11.04, p=.002). The post difference test showed that the experimental group had lower dysmenorrhea (F=16.50, p<.001) and PMS(F=13.95, p<.001) than the control group (Table 3).

10. Conclusion

This study found that the balance tapping therapy has an effect on decrease of dysmenorrhea and PMS in female college students. The balance tapping therapy is a non-pharmacological intervention that does not have the side effects and allergic reactions. In addition, it is economical and can be conducted by the patient herself. Therefore, the balance tapping therapy should be applied and utilized as a nursing intervention for dysmenorrhea and PMS. Furthermore, repeated studies about the effect of the balance tapping therapy are needed to accumulate the theoretical evidence and experimental studies to evaluate the long–term effect of the balance tapping therapy are also needed.

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