



THE INFLUENCE OF SELF-TAPPING ON ANXIETY DURING PRIMARY MENSTRUAL CRAMPS AMONG NURSING STUDENTS

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ABSTRACT

Menstruation is a sign of puberty for female adolescents. The common menstrual disorder experienced by adolescent is called painful menstruation (primary dysmenorrhea). Primary dysmenorrhea triggers both physical and psychological symptoms. One of the psychological impacts is anxiety. Self-tapping is a non-pharmacological therapy which can reduce anxiety. Aim of the research is to figure out the effect of self tapping toward anxiety level among nursing students experiencing menstrual cramps. This study was a quasi-experimental research with non equivalent pretest-posttest with control group. The total 60 respondents were divided into intervention and control group with 30 respondents each. Self tapping was practiced in intervention group, meanwhile deep breath was performed in control group. The instruments to measure anxiety were anxiety screening questionnaire and Hamilton Anxiety Rating Scale (HARS). Wilcoxon statistical test was applied to compare the level of anxiety before and after the treatment in both groups. Besides, Mann Whitney statistical test was used to compare the effectiveness of both treatments in reducing the anxiety level in each group. The anxiety mean score of the intervention group decreased from 24,63 to 16,03 after self tapping ($\Delta=8,6$; $p=0,000$), while the anxiety mean score of the control group decreased from 23,5 to 17,73 after the implementation of deep breath technique ($\Delta=5,77$; $p=0,000$). There was a significant difference between self tapping and deep breath technique in reducing anxiety level ($p\text{-value}=0.006$). Self tapping indeed has impact towards anxiety level among nursing students experiencing menstrual cramps.

Keywords: anxiety, primary dysmenorrhea, self tapping

ABSTRAK

Menstruasi merupakan tanda seorang remaja perempuan mengalami pubertas. Menstruasi seringkali menimbulkan gangguan. Gangguan menstruasi yang paling sering dialami remaja adalah nyeri menstruasi (dysmenorrhea) primer. Dysmenorrhea tidak hanya menimbulkan gejala secara fisik, tetapi juga psikologis. Salah satu dampak psikologis yang banyak dialami adalah kecemasan. Self tapping merupakan salah satu terapi nonfarmakologi untuk mengurangi kecemasan. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh self tapping terhadap kecemasan saat nyeri menstruasi (dysmenorrhea) primer pada mahasiswa PSIK FK UGM. Jenis penelitian kuasi eksperimental dengan rancangan non equivalent pretest-posttest with control group. Sampel penelitian 30 orang sebagai kelompok intervensi diberi perlakuan self tapping sementara 30 orang kelompok kontrol diberi perlakuan nafas dalam. Alat penelitian yang digunakan adalah kuesioner skrining kecemasan dan Hamilton Anxiety Rating Scale (HARS). Perbandingan tingkat kecemasan sebelum dan sesudah terapi pada kedua kelompok, dilakukan uji statistik Wilcoxon. Sementara, perbandingan efektivitas terapi antara kelompok intervensi dan kontrol dilakukan uji statistik Mann Whitney. Rata-rata skor kecemasan pada kelompok intervensi menurun dari 24,63 menjadi 16,03 ($\Delta=8,6$; $p=0,000$), sedangkan pada kelompok kontrol juga mengalami penurunan dari 23,5 menjadi 17,73 ($\Delta=5,77$; $p=0,000$). Meskipun kedua kelompok menunjukkan penurunan tingkat kecemasan, kelompok intervensi secara signifikan lebih efektif dalam menurunkan kecemasan dengan nilai $p=0,006$. Jadi terdapat pengaruh self tapping terhadap kecemasan saat nyeri menstruasi (dysmenorrhea) primer pada mahasiswa PSIK FK UGM.

Kata kunci: dysmenorrhea primer, kecemasan, self tapping

BACKGROUND

Adolescence or teenagerhood is a transitional period from childhood to adulthood (Yusuf, 2008). During this period, one will experience puberty as characterized by the onset of menstruation in female teenagers. Women may experience problems during the menstrual period or in its pattern (Batubara, 2010; Manuaba, 2006). The most frequent problem is primary menstrual cramps or, in medical term, primary dysmenorrhea (Harel, 2006).

The frequency of primary dysmenorrhea has significant influence on health status, quality of life, and social relationship (RCOG, 2004). This also sometimes makes teenagers absent from school, have poor concentration and even fail in school works (Gagua et al. 2012). In addition to physical complaints, primary dysmenorrhea often causes psychological complaints such as being aggressive, anxious, emotionally unstable, and phobia (Gagua et al. 2013).

More than 40% of women with primary dysmenorrhea experience anxiety (Wong et al. 2010). Menstrual cramps allow negative emotions such as anxiety come to the surface (Novarenta, 2013). Excessive anxiety has detrimental impact on mind and body, and it can even cause physical illnesses (Cutler, 2004). Additionally, people with anxiety often experience sleep difficulties which leads to unstable emotion and becoming irritable. Anxiety often results in uneasiness, nervousness and motor restlessness (Yustinus, 2006). Anxiety can even develop to depression (Rezki, 2014). Therefore, an intervention is needed to help prevent anxiety.

According to The Association of Tapping Touch (2010), self-tapping is a non-pharmacological therapy capable of reducing anxiety. For this reason, the researchers were interested in investigating the influence of self-tapping on anxiety during primary dysmenorrhea in female students at Nursing Science Study program (PSIK) of Faculty of Medicine, Gadjah Mada University.

METHODS

A quasi-experimental with *non-equivalent pre-test post-test with control group* design was used in this study. Ethical approval for this research has been obtained from the ethical committee of Faculty of Medicine, Gadjah Mada University with register number KE/FK/1325/EC/2015. This research was conducted in *Skills Lab* at PSIK of Faculty of Medicine, Gadjah Mada University and/or at respondent's place from July to August 2015. The sample, 60 students, was taken using consecutive sampling technique and then divided into intervention group (n=30) and control group (n=30). The subjects eligible for this study were female students aged 19 – 22 years old. Respondents were assigned to each group through a random allocation sampling technique. The chosen respondents were provided with *informed consent* and an explanation regarding the research procedure. The intervention group received self-tapping treatment, while the control group received deep breathing relaxation. Pain measurement was performed before and after intervention. Respondents received intervention for 15 minutes when they complained menstrual pain. Self tapping was done with the same intensity of moderate intensity massage. Whereas in the control group, respondents were given treatment of 15 times deep breathing relaxation. Pain measurement was carried out before and after the respondent did deep breathing. The data were collected using questionnaire on respondent's characteristics and *Hamilton Anxiety Rating Scale* (HARS) which have been declared valid and *reliable* at *r* statistic value = 0.39-0.79 and *r alpha* value = 0.94813.

Univariate analysis was used to describe the frequency distribution and percentage of respondent's characteristics. Bivariate analysis *Wilcoxon test* was used to figure out the scores of anxiety before and after the therapy. Meanwhile, *Mann Whitney test* was used to compare the effectiveness of therapies.

RESULTS

a. Respondent's Characteristics

No significant differences were found in the characteristics of intervention group and control group respondents, thus, it can be concluded that the respondents are homogeneous. The respondent's characteristics is shown in table 1.

b. Comparison of anxiety scores before therapy

No significant differences were found in the mean anxiety scores between the two groups before therapy. The result of comparison of anxiety scores

before intervention in the intervention and control groups is shown in table 2.

c. Comparison of anxiety scores differences before and after intervention

The *Wilcoxon* test result showed that there was a significant decrease of anxiety level in the intervention and control groups with *p* value <0.05, namely (*p*=0.000). *Self-tapping* was found significantly more effective in reducing anxiety than deep breathing. The result of comparison is presented in table 3.

Table 1. Comparison of respondent's characteristics

Variable	Intervention (n=30)		Control (n=30)		p
	f	%	f	%	
Age (in years old)					
19	1	3.3	4	13.3	0.164
20	3	10.0	0	0	
21	10	33.3	12	40.0	
22	16	53.3	14	46.7	
Residence					
Student housing	24	80.0	20	66.7	0.191
Family house	6	20.0	10	33.3	
Menstrual cycle regularity					
Regular	27	90.0	28	93.3	0.643
Irregular	3	10.0	2	6.7	
Ethnic					
Batak	1	3.3	2	6.7	0.681
Buginese	0	0.0	1	3.3	
Javanese	27	90.0	25	83.3	
Rote	1	3.3	0	0.0	
Sundanese	1	3.3	2	6.7	
Nutritional status					
<i>Underweight</i>	1	50	1	50	0.320
<i>Normal</i>	28	50.9	27	49.1	
<i>Overweight</i>	1	50	1	50	
<i>Obese</i>	0	0	1	100	
Age of Menarche					
≤12	17	48.6	18	51.4	0.827
>12	13	52	12	48	
Menstrual duration					
≤7 days	22	73.3	26	86.7	0.167
>7 days	8	26.7	4	13.3	
Duration of pain					
1-2 hours	4	13.3	2	66.7	0,147
>2-3 hours	5	16.7	7	23.3	
>3 hours	21	70.0	21	70.0	
Incidence of Menstrual cramp					
Continuously changing	1	3.3	2	6.7	0.412
D-3	0	0.0	2	6.7	
D-1	4	13.3	6	20.0	
D1	22	73.3	19	63.3	

Variable	Intervention (n=30)		Control (n=30)		p
	f	%	f	%	
D2	3	10.0	1	3.3	
Pain management					
Rest	22	73.3	27	90.0	0.185
Pharmacological	7	10.0	2	6.7	
Non-Pharmacological	5	16.7	1	3.3	
Anxiety management					
Untreated	15	51.7	14	48.3	0.965
Non-pharmacological	13	48.1	14	51.9	
Others	2	50	2	50	
Cause of anxiety					
Fear to exercise and sleep disorder	13	43.33	16	53.33	0.223
Cramp	17	54.8	14	45.2	

The characteristics of the respondents included age, ethnicity, nutritional status, age of menarche, pain management, residence, menstrual period, menstrual regularity, duration of pain, incidence of cramps, anxiety management, and cause of anxiety. The following table shows the distribution of

the characteristics of the respondents (Table 1). Table 1 shows that there were no significant differences in the characteristics of respondents in the intervention group and the control group with p value > 0.05. Thus the characteristics of respondents can be concluded as homogeneous.

Table 2. The anxiety score before intervention

Variable	Intervention		Control		p
	n (30)	Mean ± SD	n (30)	Mean ± SD	
Before therapy		24.63±9.44		23.5±8.721	0.609

Table 2 shows that there was no significant differences in anxiety score

before intervention in the intervention and the control groups with p-value > 0.05.

Table 3. Comparison of anxiety score before and after intervention

	Intervention group (n=30)	Control group (n=30)	p value
	Mean ± SD	Mean ± SD	
Before	24.63±9.44	23.5±8.72	1.13
After	16.03±8.27	17.73±8.07	-1.7
Δ mean	8,60	5.77	2.83
P value	0.000	0.000	0.006

Based on table 3, it can be seen that the intervention group's anxiety score difference is higher than that of the control group. This means that self-tapping is significantly more effective to reduce anxiety than deep breathing relaxation.

DISCUSSION

The range of respondent's age in this research was 19-22 years old. This is consistent with the result of research which found that primary dysmenorrhea is mostly experienced by women of 19-25 years of age (Novia, 2008; Frech, 2005). This is because in this age range, the uterine nerve function works optimally, hence the secretion of prostaglandin increased and causes pain during menstruation. In addition to the pain experienced during menstruation, women often have psychological complaints such as anxiety and depression (Gagua et al. 2013).

Nutritional status is a risk factor of primary dysmenorrhea incidence. In overweight women, *hyperplasia* occurs in their reproductive organ. It becomes the factor which also increases the risk of *dysmenorrhea* incidence (Bedu, 2015; Nataria 2011; Suliawati, 2013). However, another study showed different finding, i.e. despite the normal nutritional status of most respondents, most of them still experience primary dysmenorrhea (Mulastin, 2011). This is due not only to nutritional status which may affect *dysmenorrhea*, rather age and stress level in adolescents also give contribution to it (Mulastin, 2011). The research confirmed that most of respondents have normal nutritional status and they experience *dysmenorrhea*. Stress level in respondents become a factor which allow primary dysmenorrhea to occur. This is because most respondents are students in their final years who are writing their final projects, thus it is possible for them to have a higher stress level.

The menarche age of 58.3% respondents was ≤ 12 years old. This confirmed the research of a study which found that the average age of menarche is 11-16 years old (Suryani, 2010). Early menarche is the factor which has

correlation with primary *dysmenorrhea* incidence (Shopia, 2014). This is consistent with the result of a study which found that most respondents have menarche at ≤ 12 years old and experience primary dysmenorrhea.

Based on the data on respondent's characteristics, most respondents stated that they experience *dysmenorrhea* for more than 3 hours. This confirmed the previous research which found that during 20-22 years of age, *dysmenorrhea* is experienced in a fairly fluctuating manner, i.e. more than once a day (Suliawati, 2013). Primary dysmenorrhea can also be experienced before menstruation and it can continue for 8 hours to 3 days (Proctor & Farquhar, 2007).

The result in this research indicated that there has been a significant decrease in mean anxiety scores before and after intervention ($p=0.000$). This research finding is supported by a statement which suggests that self-tapping is one of *tapping touches* which has been proved capable of releasing suspense, increasing convenience, reducing negative emotion, and improving positive emotions (*The Association of Tapping Touch, 2010*). In addition, tapping increases serotonin level (5-HT) which constitutes a neuron serving the suppression of aggression, anxiety, unrest, pain, and depression (Minnirt & Meininger, 2001).

Several methods can be performed to increase serotonin, including doing a rhythmic activity (Lin & Kuo, 2013). Based on this statement, it be explained that the reason why self-tapping can increase the secretion of serotonin is because *self-tapping* is a therapy which involves rhythmic behavior, i.e. by touching rhythmically using the pads of both right and left hands in turn. This rhythmic movement increases the secretion of serotonin (*The Association of Tapping Touch, 2010*).

Additionally, anxiety can be controlled by shifting the focus (distraction) from the pain which is the source of anxiety. When pain is no longer the focus, the anxious, nervous, and stress feeling diminished (Brattberg, 2008). *Self-tapping*

is one of therapies which gives distraction effect. The second possibility is that anxiety can be removed by providing convenient surrounding. Soft tapping on points in the body results in convenient and relaxed sensation which then will distract the focus from pain and consequently the anxiety is reduced (*The Association of Tapping Touch*, 2010).

CONCLUSION

Self-tapping has significant influence in reducing the anxiety score during primary menstrual cramps (*dysmenorrhea*) among college students. Self tapping capable of releasing suspense, increasing convenience, reducing negative emotion, and improving positive emotions.

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