

## THE INFLUENCE OF ACUPUNCTURE THERAPY ON IRREGULAR MENSTRUATION IN ADOLESCENTS

By

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### ABSTRACT

Women's reproductive health starts from puberty which is marked by menstruation. Menstruation is a cyclical, regular shedding of the lining of the uterus, in response to the interaction of hormones produced by the hypothalamus, pituitary, and ovaries. Irregular menstruation is a condition of women who experience menstrual cycle disturbances. Menstrual cycles are usually the most irregular around menarche and menopause (Reed and Carr 2015). Several conditions can cause menstrual disorders including psychological stress, disease, hormonal disorders and nutritional status. Teenagers who enter a new environment with burdens and adaptations can cause menstrual disorders, including irregular menstruation. The impact of irregular menstruation can cause anemia, weakness and impaired concentration. overcome the problem of irregular menstruation, nursing can use complementary therapy as an alternative therapy to overcome the client's problem with the support of *evidence based practice* and nursing theory according to client needs, through acupuncture (Widyatuti 2008). Complementary therapy in nursing is increasingly in demand as an alternative in helping to solve client problems on the basis of utilizing energy balance in the body through stabbing certain points in the body (Snyder and Lindquist 2002). The purpose of this study was to analyze the effect of acupuncture complementary therapy on irregular menstruation in adolescents in Pondok Darul Ulum Islamic Boarding School, Jombang. This type of research is analytic with a research design *quasy experimental approach pre test post tes control group desain*. The study population was adolescents at Darul Ulum Jombang Islamic Boarding School who met the inclusion criteria of 550 people. The sample in this study were 138 people with technique *simple random sampling*. The intervention was given to 35 people and a control group of 35 people. The results of the analysis using the T test showed that the intervention group in adolescents with irregular menstruation averaged 73.2500, while in the control group it was 61.280. while the Sig.(2-tailed) value is 0.009. This shows that there is a difference between the intervention group and the control group. There is a significant effect of acupuncture on irregular menstruation in adolescents. Nurses need to consider acupuncture as a complement in overcoming the problem of irregular menstruation.

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### BACKGROUND

Women's reproductive health starts from puberty which is marked by menstruation. Menstruation is a regular cycle of shedding of the lining of the uterus, in response to the interaction of hormones produced by the hypothalamus, pituitary and ovaries. The menstrual cycle is the number of days between the first day of menstruation from one cycle to the onset of menstruation in the next cycle. The average duration of the menstrual cycle is 28- 35 days. Disorders of the menstrual cycle can occur at intervals that are shorter or longer than normal, or the amount of blood secreted is

greater or less than normal, this is known as irregular menstruation. Menstrual cycles are usually the most irregular around the extremes of reproduction (menarche and menopause) (Reed and Carr 2015).

The prevalence of irregular menstruation varies from 5% to 35.6% depending on age, occupation, and country of residence (Toffol et al. 2014). WHO data for 2018 states that 80% of women in the world experience irregular menstruation. Research in Tamil Nadu from 285 students 45.7% experienced irregular menstruation (DV Siva Priya 2017). According to the 2018 Basic Health Research Data, as many as 13.7% of adolescents in Indonesia experience irregular menstruation and as many as 14.9% in urban areas in Indonesia (Ministry of Health 2018). Based on the data obtained by the researchers through a preliminary study, 13 out of 50 adolescents living in Islamic boarding schools experienced menstrual disorders.

Several conditions can cause menstrual disorders including psychological stress, disease, hormonal disorders, nutrition (Jung et al. 2018). Irregular menstruation is associated with mental health conditions, such as depression, in addition to physiological factors (Park et al. 2021). Stress can be a risk of 7.27 times the risk of disruption of the menstrual cycle compared to adolescents who do not experience stress. The cause of stress is due to school stress (Sitoayu et al. 2017). The impact of menstrual disorders that are not treated can cause anemia (Sitoayu et al. 2017), weakness, impaired concentration and can affect the quality of life.

Nursing in overcoming the problem of irregular menstruation, can use complementary therapy as an alternative therapy to overcome client problems with the support of evidence based practice and supported by nursing theory according to client needs, through acupuncture (Widyatuti 2008). Complementary therapies are receiving increasing attention in nursing (Snyder and Lindquist 2002). Nurses must open themselves to changes in achieving goals integrative care (Fontaine 2005). Acupuncture is an intervention method that utilizes stimulation at acupuncture points to influence the flow of the body's bioenergy based on the philosophy of balance between the surface of the body and organs through specific meridian systems (Yin and Zenghua 2000).

The purpose of this study was to analyze the effect of acupuncture therapy on irregular menstruation in adolescents at the Darul Ulum Islamic Boarding School, Jombang.

**Materials and methods** Irregular menstruation or irregular menstrual cycles is a conditions of disruption of the menstrual cycle including secondary amenorrhea, oligomenorrhea

and polymenorrhea which often occurs in adolescents. Irregular menstruation in this study is a complaint of adolescents about the short and long cycles menstrual cycle compared to normal. The menstrual cycle can be divided into two phases: (1) a follicular or proliferative phase, and a luteal or secretory phase. Long menstrual cycle is the number of days between the first day of bleeding menstruation from one cycle to the onset of menstruation in the next cycle. Women who experience menstrual cycles that occur at intervals of less than 21 days is called polimenorrhea, while patients who experience menstrual cycles prolonged more than 35 days, is called oligomenorrheic.

This type of research is analytic with a research design quasi experimental with a pre-test post-test control group design approach, namely grouping the research sample into the treatment group and the control group, then conducting tests before treatment and after treatment. The independent variable in this study was the provision of acupuncture and the dependent variable was irregular menstruation. The population of this study were adolescents at the Darul Ulum Islamic Boarding School, Jombang. The inclusion criteria in this study were adolescents aged 13-19 years who had menstruated and were willing to be respondents, the exclusion criteria were adolescents who had menstruated and were in an unhealthy condition (sick). The research sample was 550 adolescents who had menstruated at Darul Ulum Jombang Islamic Boarding School. The sampling technique was carried out using simple random sampling. The data collection technique used an online questionnaire given to 550 adolescents according to the inclusion criteria who had previously been given an explanation prior to approval regarding the objectives, benefits and risks as well as research techniques. Of these, 525 youths were willing to be respondents. out of 525, 138 respondents experienced menstrual disorders. Of the 138 respondents who experienced menstrual disorders, the researchers randomized as many as 35 respondents who experienced irregular menstruation with a simple random sampling technique. 35 respondents were given acupuncture and 35 respondents were not given acupuncture.

Acupuncture procedures were performed at Guanyuan (CV 4), Qihai (CV 6), Sanyinjiao (SP 6), Suzanli (SP 36) and Shenmen (HT 7) points. Giving acupuncture action at that point is done 16 times. In one week performed acupuncture action 2 times. This research was conducted for 6 months from February to August. The instrument for identifying the characteristics of respondents and menstrual problems (age, education, place of residence (dormitories), menstrual disorders) uses a questionnaire that is given online. Acupuncture actions are carried out by researchers who have acupuncture complementary nursing expertise with a team that has acupuncture expertise. Furthermore, the data were analyzed using the T-Test statistics to prove the hypothesis.

## RESULTS AND DISCUSSION

Table 1. Characteristics of Adolescents (n = 70)

Characteristics	Frequency	Percentage
<b>Age</b>		
13 - 15	34	48.6
16 - 18	26	37.1
19 - 20	10	14.3
Total	70	100.0
<b>Education</b>		
SMP	31	44.3
SMA	29	41.4
University	10	14.3
Total	70	100.0
<b>History of Menstrual Disorders</b>		
Yes I have	23	32.9
No	47	67.1
Total	70	100.0
<b>Length of stay in hostel</b>		
< 1 year	25	35.7
>1 year	20	28.6
>2 year	15	21.4
>3 year	10	14.3
Total	70	100.0
<b>Menarche</b>		
9 – 12 year	28	40.0
13 – 15 year	32	45.7
16 – 18 year	9	12.9
19 – 23 year	1	1.4
Total	70	100.0

Based on table 1, it shows that the most dominant age in this study was the age of 13-15 years, almost half of the respondents. Likewise, the education of almost half of the respondents is junior high school education. History of menstrual disorders more than half have never experienced menstrual disorders. Most of the youth less than 1 year of age live in dormitories. Other research shows that women with low levels of education are more at risk of having irregular menstruation (Kwak, Kim, and Baek 2019). Age of menarche Most occur between the ages of 9-15 years. Irregular menstrual problems are experienced by many women at the beginning of menarche (Reed and Carr 2015).

The bivariate analysis of the effect of acupuncture on irregular menstrual problems in adolescents can be seen in table 2.

**Table 2.** Statistical values and correlations of menstrual irregularities in adolescents. Kelompok N Mean Std. Deviation Std. Error Mean Sig

Group	N	Mean	Std. Deviation	Std. Error Mean	Sig
Irregular Intervention	35	73.250	12.0924	2.7039	0.009
Menstruation Control	35	61.280	12.6882	2.8372	

Based on table 2, it shows that the intervention group in adolescents with irregular menstruation has an average value of 73.2500 in the intervention group, while in the control group it is 61.280. while the Sig.(2-tailed) value is 0.009, meaning that  $H_0$  is rejected, meaning that the average results of the intervention group and the control group are different (not the same). This shows that there is a difference between the intervention group and the control group. There is an effect of acupuncture on irregular menstruation in adolescents.

In adolescents who live in Islamic boarding schools, giving acupuncture at points CV4, CV 6, SP 6, SP 36 and HT 7 can be done routinely and regularly and cooperatively. This is in accordance with the results of other studies which show that adolescents who experience irregular menstrual problems experience cycle changes to normal by stabbing at Qihai (CV 6), Taichong (LV3), Sanyinjiao (SP6), Diji (SP8) points (Dimiyati, Suhariningsih, and Fatimah

2020). Other studies that support the research results are studies conducted by acupuncture therapy at Guanyuan (CV 4), Shenshu (BL 23), Sanyinjiao (SP 6), Shenmen (HT 7) and gotu kola (*Centella asiatica* (L.)) herbs can shorten menstrual cycle from 76 days to 41 days (Prayuni, Imandiri, and Adianti 2019).

This is based on the theory of acupuncture that menstrual irregularities can be treated at points CV6, CV 4 and SP6 (Wu et al. 2015). The use of acupuncture points stimulates the circulation of bioenergy through the meridians around the location of pain and exercises physiological control (Saputra 2017). Stimulating certain points in the body can activate circulation and organs so that it affects adolescent hormones, relaxes and reduces stress so that it can facilitate menstruation. Qihai point (CV6) with techniques to promote vascularization (Saputra 2000). In another study, the Qihai point (CV6) was included in the main point of handling irregular menstruation due to female fertility disorders (Cheong, and Ledger 2008). Acupuncture therapy has a good regulatory effect on endocrine function, glucose and lipid metabolism so that it is useful in regulating the menstrual cycle because it can modulate the sympathetic nervous system, endocrine system, and neuroendocrine system and is effective in increasing menstrual frequency, ovulation and serum hormone levels (Zhou et al., 2017). It is hoped that this therapy can overcome irregular menstruation (Dimiyati, et al 2020).

## CONCLUSION

There is an effect of giving acupuncture therapy to menstrual irregularities. Teenagers who experience irregular menstrual disorders become smooth and their cycles become normal. Acupuncture therapy can be used as an alternative in overcoming the problem of irregular menstruation in adolescents.

## Conflik of interest

The author has no conflict of interest with anyone regarding this research.

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