Effectiveness of Combo Acupressure Points During the Menstrual Phase Against Dysmenorrhea in Adolescents

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Abstrak

Dysmenorrhea is a problem often experienced by teenage girls during menstruation. Dysmenorrhea in adolescents can disrupt academic activities as well as daily activities, which can ultimately impact the quality of life of adolescents in the future. This study aims to determine the effectiveness of acupressure therapy at 3 points on the intensity of dysmenorrhea pain in adolescents. The type of this research is quantitative research, using a randomized clinical trial design. The research was conducted in Pekanbaru, and the research population was female students of the Faculty of Nursing at the University of Riau Pekanbaru. A sample of 30 people, consisting of an experimental group and a control group, was selected based on inclusion and exclusion criteria. The measuring instrument used in this study consists of 2 parts. The first is a structured questionnaire, and the second is a VAS scale. The research results show that most respondents are aged 18-19 (53%), mainly of Malay ethnicity (43.3%). Based on the results of the bivariate test analysis, there is a significant difference in pain intensity before and after the intervention in the experimental group and the control group (p-value>α), namely 3.13 points in the experimental group compared to 2.53 points in the control group. However, based on the tests on both groups, combined acupressure at points LR3, LI4, and Yintang did not reduce dysmenorrhea pain intensity in adolescents when performed during the menstrual phase (p-value>α). The results of this study can recommend the use of acupressure as a nursing intervention or as an independent intervention for adolescents to manage dysmenorrhea. The results of this study can recommend the use of acupressure as a nursing intervention or as an independent intervention for adolescents to address dysmenorrhea.

Keywords: Acupressure, Dysmenorrhea, Primary Dysmenorrhea, Adolescents.

Introduction

Dysmenorrhea is one of the gynecological issues often experienced by adolescent girls. Dysmenorrhea is the pain felt during menstruation. Dysmenorrhea is pain in the lower abdomen, centered on the suprapubic area, and can spread to the lower back and the back of the thighs. The pain is felt a few hours before the onset of vaginal bleeding, or it can also be felt at the beginning of menstruation and peaks with the amount of menstrual blood flow during the first to second days of the menstrual period (Hockenberry & Wilson, 2009).

Dysmenorrhea is important to address because it has been scientifically proven to cause several negative impacts on adolescents, including frequently feeling weak and tired during dysmenorrhea (Pavithra et al., 2020). In adolescents with severe dysmenorrhea, pain affects attendance during school exams, disrupts concentration while studying, interferes with sports activities, and disrupts the social life of adolescents (Vlachou et al., 2019). All these conditions can disrupt academic and daily activities, which may ultimately affect the quality of life of adolescents (Sharma et al., 2008; Ogunfowokan & Babatunde, 2009).

The prevalence of dysmenorrhea among adolescents is relatively high. Dysmenorrhea is experienced by 40%–90% of women of various ages in different countries around the world (El-Gendy, 2015). In Malaysia, 62.3% of adolescent girls experience dysmenorrhea (Liliawati, Verna & Khairani, 2007) with varying levels of pain. A study in Sweden showed that the prevalence of dysmenorrhea was 89% among adolescents born in 2000 (Soderman, Edlund & Marion, 2018). Meanwhile, a study conducted on nursing students in Greece reported a dysmenorrhea incidence rate of 89.2% (Vlachou et al., 2019). Based on a study conducted on middle adolescence teenagers in 2012 in the city of Bagan Siapi-Api, Riau province, the prevalence of dysmenorrhea even reached 95.7% (Putri, Hasanah & Anggreni, 2012).

Excessive production of prostaglandins in the endometrium during the luteal phase of the menstrual cycle is suspected to be one of the causes of dysmenorrhea in some adolescents. Prostaglandins (especially E2 and F2α) diffuse into the endometrial tissue and cause abnormal uterine muscle contractions, leading to uterine ischemia and hypoxia. (Hockenbery & Wilson, 2009). Dysmenorrhea is also associated with low levels of anti-Müllerian hormone (AMH) during the menstrual phase (Konishi et al., 2014).

The management of dysmenorrhea can be done with pharmacological therapy using prostaglandin inhibitor medications (Hockenbery & Wilson, 2009). Dysmenorrhea can also be managed with various non-pharmacological therapies. Several non-pharmacological therapy options that can be used include special diets (including herbal remedies, vitamins, and supplements), distraction, relaxation, guided imagery (Hockenbery & Wilson, 2009), transcutaneous electrical nerve

stimulation (TENS) (Hockenbery & Wilson, 2009; Kannan & Claydon, 2015), massage (Wang et al., 2009), heat therapy, far-infrared ray, yoga, spinal manipulation, low-level light therapy (LLLT), acupuncture (Kannan & Claydon, 2015), and acupressure (Wang et al., 2009; Kannan & Claydon, 2015).

The appropriate administration of non-pharmacological therapy is expected to reduce the impact of dysmenorrhea in adolescents. One of the theories used to address dysmenorrhea with non-pharmacological therapy is based on its function related to the manipulation of opioid hormone activity in the individual's body, as used in acupressure techniques (Kannan & Claydon, 2015). Acupressure (finger pressure technique) is one of the non-pharmacological therapy methods that involves a special technique of manipulating various points on the body's meridians. The goal is to enhance body energy flow, which in traditional Chinese medicine is known as 'chi.' Acupressure is also described as acupuncture without needles, but acupressure has various techniques and uses methods that are quite different (Ody, 2008). Acupressure has been proven to reduce pain intensity (El-Gendy, 2015) and the quality of pain during menstruation (Hasanah, Yetti & Wanda, 2014), reduce the location of dysmenorrhea pain, and alleviate accompanying dysmenorrhea symptoms in adolescent girls (El-Gendy, 2015). acupressure therapy is expected to improve blood circulation, allowing prostaglandins to flow in the bloodstream and not accumulate in the uterus, ultimately reducing menstrual pain related to the production of prostaglandins during the luteal phase.

Several points that have been proven to be effective for treating dysmenorrhea are points commonly used to address gynecological issues, including the Sanyinjiao point (SP6) (Jun et al., 2007; Chen, Chien & Liu, 2013), the Hoku/He-qu point (LI4), and the Taichong point (LR3) (Alamsyah, 2009; Hasanah, Yetty & Wanda, 2014; Chen, Chien & Lin, 2013; Jun et al., 2007). Additionally, it can also be performed using auricular acupressure techniques (on the ear) at the liver point (CO12), kidney point (CO10), and endocrine point (CO18) (Wang et al., 2009).

Acupressure can be performed on a single point, but it is usually done in combination with pressure on several points to achieve a better effect. In this study, the researchers want to see the effectiveness of single pressure on the Taichong point (LR3) in combination with the Hequ point (LI4) and the Yintang point. The LR3 point is located on the back of the foot, in the space between the bones of the big toe and the index toe, and this point functions for relaxation and analgesia. The LI4 point is located between the index finger and thumb of the hand, while the Yintang point is a special point located in the middle of the eyebrows, which can enhance body relaxation (Alamsyah, 2009).

Empirically, pressure on the Taichong and other points can eliminate stagnation in blood vessels and meridians. Additionally, pressure on this point can provide energy to the body and reduce pain (Alamsyah,

2009). Pressing on the single point LR3 during the luteal phase has been proven to reduce dysmenorrhea in adolescent girls by 1.03 points (Hashanah, 2010). Furthermore, based on Julianti's (2014) research, acupressure on the combination of LR3 and PC6 points for 1-2 days during the menstrual cycle has been proven to reduce pain intensity by 1.76 points. Julianti's (2016) study also proved that acupressure on the combination of LI4 and PC6 points on the first day of the menstrual cycle could reduce pain intensity by 0.62 points.

In a preliminary study conducted at the Faculty of Nursing, University of Riau, out of 178 female students in the late adolescent age range, it was found that 78.5% experienced dysmenorrhea. From that number, 18.7% experienced dysmenorrhea with severe pain levels, 81.2% experienced moderate dysmenorrhea and the remaining experienced mild dysmenorrhea. Among the teenagers who experience severe dysmenorrhea, they report having difficulty concentrating during lectures and feeling tired and lethargic throughout the day.

Therefore, dysmenorrhea in adolescents needs to be taken seriously. Nurses are expected to play an active role in the early detection of dysmenorrhea in adolescents by providing appropriate nursing care. Nurses can play a role as caregivers/care providers by administering effective, inexpensive, minimally side-effect non-pharmacological therapies that are easy for teenagers to perform independently. It is hoped that with appropriate early intervention, the quality of life for adolescents in the future can be improved. Acupressure is one type of non-pharmacological therapy that nurses can administer in cases of dysmenorrhea.

The general objective of this study is to examine the effectiveness of combined acupressure therapy on changes in dysmenorrhea pain intensity in late adolescent girls. Specifically, this study aims to examine the characteristics of adolescents experiencing dysmenorrhea and the extent of the difference in the reduction of dysmenorrhea pain intensity before and after acupressure therapy.

Specifically, this research aims to examine the characteristics of adolescents experiencing dysmenorrhea and the extent of the difference in the reduction of dysmenorrhea pain intensity before and after acupressure therapy.

Method

The type of this research is quantitative research, using a randomized clinical trial design. The research was conducted in Pekanbaru, and the research population was female students of the Faculty of Nursing at the University of Riau Pekanbaru. A sample of 30 people, consisting of an experimental group and a control group, was selected based on the following criteria: age ≥ 15 years, not living with parents, unmarried, experiencing pain during menstruation, menstrual period duration of 3-8 days, menstrual cycle interval of 21-35 days, pain intensity during menstruation between 1-8 based on the VAS scale, no issues in the acupressure area due to fractures, ulcers, varicose veins, inflammation,

or other skin diseases, and willingness to be respondents. Next, the following conditions become exclusion criteria in this study: already known to have reproductive tract diseases and systemic disorders based on a doctor's diagnosis and using oral contraceptives, NSAIDs, analgesics, and synthetic prostaglandin inhibitors 4 hours before the implementation of acupressure until 4 hours after the use of acupressure.

The measuring instruments used in this study consist of 2 parts. The first is a structured questionnaire, and the second is a VAS scale. The structured questionnaire developed by the researchers was used to collect data in the form of demographic and biosocial data of the respondents. In contrast, the VAS scale was used to assess pain intensity in the pre-test and post-test. Based on a systematic review conducted by Jiang et al. (2013), the VAS scale was used in 75% of studies employing an RCT design to assess the effectiveness of acupressure on dysmenorrhea.

The respondents were observed during the menstrual phase. The pre-test was conducted on the first or second day, followed by two acupressure sessions with a 10-minute interval, and then a post-test was conducted. The intervention was carried out by applying pressure on points LR3, LI4, and the Yintang point. Two nursing students who had received training in performing acupressure for dysmenorrhea provided the intervention. Both have undergone perception alignment and validation of the technique and dosage of pressure application at each acupressure point used in this study. Acupressure was administered to the intervention group, according to the planned procedure, and the control group, but the intervention was given after the post-test.

After all the data from all respondents have been collected, univariate and bivariate analyses are conducted. Univariate analysis was used to examine the characteristics of the respondents to be studied. In contrast, bivariate analysis was conducted to assess the effectiveness of acupressure in both groups (Mann-Whitney test) and to compare the changes in dysmenorrhea pain intensity between the intervention and control groups (Wilcoxon test).

Results

Based on the results of data collection conducted from September to October 2019 involving 30 respondents, data analysis was carried out on the characteristics of the respondents and the intensity of pain experienced during menstruation.

Characteristics of Respondents Based on Age

Based on age, the overall respondents are adolescent girls in late adolescence. The researcher grouped the ages based on yearly intervals. Most of the respondents were aged 18-19 years (53.3%).

Table 1. Characteristics of Respondents Based on Age

Age	Frequency	Percentage
15-17	1	3.3
18-19	16	53.3

20-21	13	43.3
Total	30	100.0

Table 2. Characteristics of respondents by ethnicity

Ethnic	Frequency	Percentage
Minang	4	13.3
Malay	13	43.3
Batak	3	10.0
Java	6	20.0
Dll	4	13.3

Based on ethnicity, most respondents are Malay (43.35%). The rest are of Minangkabau, Batak, Javanese, Sundanese, and other ethnicities. The rest are of Minangkabau, Batak, Javanese, Sundanese, and other ethnicities.

Data analysis was conducted on the pain intensity variable before and after the acupressure intervention. The Wilcoxon test was conducted on the control and experimental groups before and after the intervention.

Tabel 3. Comparison of pain intensity before and after the intervention in the Intervention Group

Pre-test	2	7	4.40	0.001
Post-test	0	3	1,27	

Table 4. Comparison of Pain Intensity Before and After Intervention in the Control Group

Pre-test	2	8	4.40	0.002
Post-test	0	7	1,87	

Further analysis results show that there is a significant difference in pain intensity before and after the intervention in both groups, both in the experimental group and the control group. The comparison of pain intensity before and after the intervention group was 3.13 points and 2.53 points in the control group.

Tabel 5. Comparison of Pain Intensity After Intervention in the Intervention Group and Control Group

Group	Min	Max	Mean	Sig.
Intervention	0	3	1.27	0.902
Control	0	7	1,87	

The study was conducted on two intervention and control groups, with a pre-test and post-test design. The Mann-Whitney test was conducted on both groups' post-test pain intensity variable. Acupressure was performed on the LR3 point (Thaicong), LI4 point (Hequ), and

Yintang point (special point). This test was conducted because the normality test requirements were not met.

Further analysis results show no difference in post-test pain intensity between the experimental and control groups, with a p-value of 0.902 (>α). However, the maximum pain intensity in the experimental group was lower than that in the control group.

DISCUSSIONS

Characteristics of Respondents Based on Age

Based on age, the overall respondents are adolescent girls in late adolescence. The researcher grouped the ages based on yearly intervals. Most respondents are aged 18-19 years (53.3%). According to Sarwono (2000), there are three stages of adolescent development in the process of adjusting to adulthood, namely early adolescence, middle adolescence, and late adolescence, where the age boundaries for these three stages of development are early adolescence (ages 11-14), middle adolescence (ages 15-17), and late adolescence (ages 18-20). The selection of respondents within this age range is also important, as this therapy can be used as an independent therapy by adolescents who have already developed independence in their health-seeking behavior, a capability that adolescents typically possess from mid to late adolescence.

Characteristics of Respondents based on Ethnicity

Based on ethnicity, most respondents are Malay (43.35%). The rest belong to the Minangkabau, Batak, Javanese, Sundanese, and other ethnic groups. The differences in ethnic groups within Indonesian society also signify cultural differences embraced and recognized in each of the existing ethnic groups. Potter et al. (2017) revealed that cultural norms influence many aspects of human life, including attitudes, behaviors, and values. It is also said that culture will influence how a person responds to pain. Thus, culture is considered one of the 14 factors influencing this source.

Most of the residents of the city of Pekanbaru are indigenous people of the Riau province who are of Malay ethnicity. Similarly, the demographic distribution of the Riau community in general. Most of the research respondents are teenagers with one parent from the Malay ethnic group, originating from various regions in the Riau Province. The Malay culture in response to pain certainly also plays a role in this research. However, the study does not aim to examine how culture influences the pain experienced by the respondents; it is only considered as characteristic data.

Comparison of Pain Intensity Before and After the Intervention

Data analysis was conducted on the pain intensity variable before and after the acupressure intervention. The Wilcoxon test was conducted on the control and experimental groups before and after the intervention was given. Further analysis results show that there is a significant difference in pain intensity before and after the intervention in both groups, both the experimental group and the control group. The comparison of pain intensity before and after the

intervention group was 3.13 points and 2.53 points in the control group.

Compared to previous studies, the reduction in pain intensity after the intervention in this study is much higher. Acupressure on the single point LR3 performed during the luteal phase reduced pain intensity by only 1.03 points (Hasanah, 2010). In contrast, acupressure on the combination of points LR3 and PC6 for 1-2 days during the menstrual phase reduced pain intensity by 1.76 points (Julianti, 2014). Meanwhile, in Julianti's (2016) study, acupressure on the combination of LI4 and PC6 points on the first day of the menstrual phase only reduced pain intensity by 0.62 points. The addition of one extra point in this study likely influenced the level of pain intensity reduction after the intervention, especially the pressure on the Yintang point, which empirically has been reported to provide more relaxation effects in many cases, and this is also a special point in acupressure therapy.

The addition of one more point in this study is likely to influence the reduction in pain intensity after the intervention, especially the pressure on the Yintang point, which empirically has been reported to provide more relaxation effects in many cases, and this is also a special point in acupressure therapy. In a relaxed condition, it affects Chi and the flow of life energy that circulates throughout the body (Ody, 2008). In a state of relaxation, it affects Chi and the flow of life energy that circulates throughout the body (Ody, 2008). The effect of pressing acupressure points is also related to its impact on the production of endorphins in the body. Endorphins are painkillers produced by the body. Endorphins can affect the pain perception areas in the brain, like opiate drugs like morphine. The release of endorphins is controlled by the nervous system, which is sensitive to pain and external stimuli, and once triggered using acupressure techniques, it will instruct the endocrine system to release a certain amount of endorphins according to the body's needs (Ody 2008), providing a natural analgesic effect for the pain experienced during dysmenorrhea. However, in this study, the experimental and control groups experienced a significant reduction in pain intensity before and after the intervention due to unavoidable biases in data collection and intervention implementation.

However, in this study, both the experimental and control groups experienced a significant reduction in pain intensity before and after the intervention, as some biases in data collection and intervention implementation were unavoidable in this research. The comparison of pain intensity after the intervention in both groups

Comparison of Pain Intensity after Intervention in Both Groups

The study was conducted on two groups, intervention and control, with a pre-test and post-test design. The Mann-Whitney test was conducted on both groups' post-test pain intensity variable. Acupressure was performed on the LR3 point (Thaicong), LI4 point (Hequ), and Yintang point (special point). This test was conducted because the normality test requirements were not met. Further analysis shows no difference in pain intensity between the control and experimental groups, with a p-value of 0.902 (>α).

In the results table, it is observed that the average pain

intensity in the experimental group in this study is lower compared to the average pain intensity in the control group, and the pain intensity before the intervention was indeed not normally distributed. It may be caused by various biases that could not be controlled in this study, including anxiety levels, nutritional intake during the luteal phase and menstrual phase, as well as differences in the location of the intervention for each respondent (conducted at each respondent's residence). For some respondents, data collection and intervention were carried out on the first day of the menstrual phase, while for others, it was done on the second day.

It can be caused by various uncontrollable biases in this study, including anxiety levels, nutritional intake during the luteal and menstrual phases, and differences in the location of the intervention for each respondent (conducted at their respective residences). Additionally, for some respondents, data collection and intervention were conducted on the first day of the menstrual phase. In contrast, for others, it was done on the second day of the menstrual phase.

Conclusion

Based on the research results, it can be concluded that most respondents are teenage girls aged 18-19 years (53%). Based on ethnicity, most respondents are Malay (43.3%). Based on the results of the bivariate test analysis, it was found that the comparison of pre-test and post-test pain intensity in the experimental and control groups both experienced a significant decrease (p-value<α), namely 3.13 points in the experimental group and 2.53 points in the control group. However, in the test of the two groups, the experimental and control acupressure groups did not show significant results in reducing dysmenorrhea pain intensity when performed during the menstrual phase (p-value > α).

However, in tests on experimental and control groups, acupressure did not show significant results in reducing dysmenorrhea pain intensity when performed during the menstrual phase (p-value > α). Several biases that could affect the research results could not be controlled in this study, and this is a weakness in this research. Some biases that could affect the research results could not be controlled in this study, which becomes a weakness. Among them are the level of anxiety, nutritional intake during the luteal phase and menstrual phase, as well as the differences in the location of the intervention for each respondent (conducted at each respondent's residence), and for some respondents, data collection and intervention implementation were carried out on the first day of the menstrual phase. In contrast, for others, it was done on the second day of the menstrual phase.

Acupressure can be recommended as a nursing intervention or as an independent intervention to address dysmenorrhea in adolescents, especially in primary dysmenorrhea. Acupressure has a greater effect and reduces pain intensity when performed by combining the right points, thus supporting each other to reduce pain intensity.

References

Alamsyah, I. (2009). Cara lebih mudah menemukan titik terapi acupoint. Jakarta: Isa.

Chen, M., Chien, L. & Liu, C. (2013). Acupuncture or acupressure at the Sanyinjiao (SP6) Acupoint for the treatment of primary dysmenorrheal: a meta-analysis. Evidence Based complementary and alternative Medicine. Vol 2013

El-Gendy, S. R. (2015). Impact of acupressure on dysmenorrheal pain among teen-aged girls students. Wulfenia journal. Vol 22, No. 2; Februari 2015.

Hasanah, O. (2010). Efektifitas terapi akupresur terhadap dismenore pada remaja di SMPN 5 dan SMPN 13 pekanbaru. Tesis FIK – UI: Tidak dipublikasikan.

Hasanah, O., Yetti, K. & Wanda, D. (2014). Akupresur dapat menurunkan kualitas nyeri dismenore pada remaja. Journal Ners Indonesia. Vol 4. No. 2.

Hockenberry, M. J. & Wilson D. (2009). Wong's essentials of pediatric nursing, eighth edition. St Louis, Missouri: Mosby.

Jiang, H., Ni, S., Li, J., Liu., Li, J., Cui, X. & Zhang, B. (2013). Systematic review of randomized clinical trials of acupressure therapy for primary dysmenorrheal. Evidence Based complementary and alternative Medicine. Vol 2013

Julianti. (2016). Efektifitas akupresur terhadap dismenore pada remaja putri. Skripsi PSIK-UR: Tidak dipublikasikan

Julianti, E.F. (2014). Efektifitas terapi akupresur terhadap dismenore pada remaja di SMAN 5 & MA Al-Huda Bengkalis. Skripsi PSIK-UR: Tidak dipublikasikan.

Jun, E. M., Chang S., Kang, D. H. & Kim, S. (2007). Effects of acupressure on dysmenorrhea and skin temperature changes in college students: a non-randomized controlled trial. International Journal Of Nursing Student, 44(6):973-81.

Kannan, P. & Claydon, L. S. (2015). Physiological rationales of physical therapy interventions in management of primary dysmenoohea: acritical review. Physical therapy reviews. 2015. Vol 20. No 2.

Konishi, S., Nishihama, Y., Iida, A., Yoshinaga, J. & Imai, H. (2014).The association of antimullerian hormonr level with menstrual cycle type and dysmenorrhea in young asymptomatic woman. Journal of fertility and sterility. 2014.

Liliwati, I., Verna, L. K. M. & Khairani, O. (2007) Dysmenorrhoea and its effects on school activities among adolescent girls in a rural school in selangor, malaysia. Med & Health, 2(1), 42-47.

Ody, P. (2008). Pengobatan praktis dari cina. Jakarta: Esensi.

Ogunfowokan, A. A. & Babatunde O. A. (2009) Management of primary dysmenorrhea by school adolescents in ile-ife, nigeria. The Journal of School Nursing Onlinefirst. Diperoleh 4 November, 2009 dari http://aph.sagepub.com/cgi/content/refs/.

Pavithra, B., Sangeetha, A., Anuja, A. V., Doss, S. S., Thanalakshmi, J. & Vijayalakshmi, B. (2020). International Journal of Research in Pharmaceutical Sciences. 2020, 11 (2), 1348-1351

Putri, M.S., Hasanah, O. & Anggreini, S. N. (2012). Prevalensi dan manajemen dismenore pada remaja putri di kecamatan bangko kota bagansiapiapi kabupaten rokan hilir. Jurnal Ners Indonesia, Vol 3, No 1. September 2012.

Potter, P. A., Perry, A. G., Hall, A., & Stockert, P. A. (2017). Fundamentals of nursing. Ninth edition. St. Louis, Mo.: Mosby Elsevier. Sarwono. (2000). Teori-teori psikologi sosial. Jakarta: Raja Grafindo Persada

Sharma, A., Taneja D. K., Sharma, P. & Saha R. (2008). Problems related to menstruation and their effect on daily routine of students of a medical college in delhi, india. Asia Pacific Journal of Public Health. Diperoleh 4 November 2009 dari http://aph.sagepub.com/cgi/content/refs/20/3/234.

Soderman, L., Edlund, M. & Marions, L. (2019). Prevalence. And impact of dysmenorrhea in Swedish adolescents. Acta Obstet Gynecol Scand; 98: 215–221. https://doi.org/10.1111/aogs.13480

Vlachou, E., Owens, D.A., Lavdaniti, M., Kalemikerakis, J., Evagelou, E., Fasoi, G., Evangelidou, E., Govina, O. & Tsartsalis, A. N. (2019). Prevalence, wellbeing, and symptoms of dysmenorrhea university nusing students in greece. Diseases, 7, 5.

Wang, M. C., Hsu, M. C., Chien, L. W., Kao, C. H., & Liu, C. F. (2009). Effects of auricular acupressure on menstrual symptoms and nitric oxide for women with primary dysmenorrheal. The Journal of Alternative And Complementary Medicine, 15(3), 235–242.