Study to assess the Effectiveness of Foot Reflexology on Premenstrual syndrome and Dysmenorrhoea among nursing students - Pilot Study

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Abstract:

Introduction: Puberty is one of the amazing journeys from adolescence to womanhood and it's a momentous event for becoming a woman. The women who suffered from premenstrual problems were formally described by Frank in1931 and the term Pre-Menstrual syndrome (PMS) was first introduced by Greene and Dalton in 1953.Complementary Alternative Medicine (CAM) is non-invasive and harmless. Foot Reflexology is a natural healing therapy that is highly effective in dealing with many health problems. Dysmenorrhea is a cause of frequent short-term work and school absenteeism in women of reproductive age. **Methods:** Quantitative approach and quasi-experimental pre-test post-test control group design was adopted for this study. The convenient sampling technique was used to select 20 samples as per inclusion criteria. Tools used for the study were Survey questionnaire, demographic Performa, Structured Premenstrual syndrome questionnaire, and numerical pain rating scale. **Results:** The overall PMS pretest-posttest mean score with SD was 50.7 ± 16.04 and 40.6 ± 13.18.The overall Dysmenorrhoea Pretest- post-test mean score with SD was 7.0 ± 2.21 and 5.20 ± 1.62. The F test value of PMS 16.6967 was significant at $p<0.05$ and the F test value of dysmenorrhoea 22.883406 was significant at $p<0.05$.

Keywords: Premenstrual syndrome, Dysmenorrhoea, Foot Reflexology

Introduction:

      Adolescence is the critical phase where many biological, emotional, and social developments take place. During this period young people go through many bodily changes to achieve physical maturity. Menarche (initiation of menstruation) is one of such changes that take place in the life of an adolescent. Often, menstruation is accompanied by several disturbing minor or severe health-related issues like irregular menstruation, dysmenorrhoea (painful menstruation), nausea, vomiting, irritability, etc. (Ms. Divya Rohit and Ms. Anjali Tiwari, 2018).

      Premenstrual syndrome (PMS) is the cyclic occurrence in the luteal phase of the menstrual cycle with a combination of distressing physical, psychological, and behavioral changes of sufficient severity to result in deterioration of interpersonal relationships, academic abilities, and interference with normal activities which remit upon onset or immediately after menstruation (Marwa A. Mohamed, 2016).

      A Greek term Dysmenorrhea describes painful uterine contractions during menstruation and it is one of the mostcommon menstrual disorders in women. Dysmenorrhea is the most prevalent problem among women 45 to 95% of women with different intensities. Dysmenorrhea affects the mental and physical health of women particularly those who are not seeking healthcare and treatment. (MahboubehValiani et al,2010)

      Reflexology is a form of complementary and alternative medicine (CAM). CAM refers to treatments used either as an adjunct to, as an alternate of conventional medical care. Reflexology is a non-pharmacological method for the treatment of different health problems like PMS, dysmenorrhea, etc. Moreover, it is a form of massage that is associated with applying pressure on reflex points of

the feet. It is believed that these points are connected with all parts of the body and the pressure on reflexive Points can affect the body's physiological responses (Nasiri et al, 2016).

This study aimed to determine the effectiveness of Foot reflexology on premenstrual syndrome and dysmenorrhoea among nursing students, to compare the effectiveness of Foot reflexology on PMS and dysmenorrhoea among nursing students in the experimental and control groups, and to find a correlation between Premenstrual syndrome and dysmenorrhoea

Materials and Methods:

The research approach adopted was a quantitative approach and a quasi-experimental- pre-test post-test control group design was used for this study. The study was conducted at Sacred Heart School of Nursing, Madurai. 20 adolescent girls (10 in experimental, 10 in the control group) with premenstrual symptoms and dysmenorrhoea were selected by convenient sampling technique. The survey was conducted to rule out the subjects with PMS and dysmenorrhoea by using a survey questionnaire. Data was collected through Performa of demographic variables, Premenstrual syndrome was assessed using Structured Premenstrual syndrome questionnaire and dysmenorrhoea was assessed through numerical pain rating scale.

Data collection started from 24th August 2021 to 22nd October 2021.A pre-test was conducted on the 1st day of the menstrual cycle for dysmenorrhoea and the 4th day for PMS for both experimental and control groups. The intervention started on the 4th day of the menstrual cycle for the experimental group. Relaxation exercises were performed by massaging the foot all over slowly and gently twisting the spine area on the foot. (2 minutes for each foot). Thumb walking up and down on the spine (2 minutes for each foot). Stimulate the meridian points such and the Ovary and Uterus. (2 minutes for each point, 6 minutes/foot). The duration of treatment is 10 minutes/ foot (total 20 minutes). Reflexology was provided once a day for weekly twice for 8 weeks (starts from 4th day of menstrual cycle and ends with 26th day of the menstrual cycle). This had been done for 2 consecutive menstrual cycles. Post-test was done each month on the 26th day of each menstrual cycle for PMS and dysmenorrhoea on the 1st day of the menstrual cycle for both experimental and control groups by using the same tool. Descriptive and inferential statistical methods were used to analyze the data.

Results:

The study findings revealed that the pre-test means the value of PMS for the experimental group was 50.7 and SD 16.04 whereas in the control group pre-test mean value is 45.40 and SD 11.11. The post-test mean value for the experimental group was 40.6 and SD was 13.18.as much in follow up the mean was 33.20 and SD 11.66. In the control group, the post-test mean value was 47.10, and post-test SD was 10.18 and the follow-up mean was 49.40 and SD 9.52. Repeated measures ANOVA test has been used to compare the result of the experimental and control groups.

This study also revealed that the pre-test means the value of dysmenorrhoea for the experimental group was 7.0 and SD 2.21 on the other hand control group pre-test mean value was 7.4and SD 1.65. The post-test mean value for the experimental group was 5.20 and post-test SD was 1.62 whereas in follow up the mean was 4.30and SD 1.25. In the control group, the post-test mean value was 7.3, and post-test SD was1.42 and the follow-up mean was 7.8 and SD 1.03. Repeated measures ANOVA test has been used to compare the results of experimental and control groups.

Table 1: Comparison of Premenstrual syndrome scores within the group (N=10)

Premenstrual Syndrome	Mean±SD Experimental Group (N=10)	F value	P-Value	Mean± SD Control Group (N=10)	F value	P-value
Pretest	50.7 ± 16.04	16.6967	0.000079*	45.40 ± 11.11	1.793	0.087
Posttest 1	40.6 ± 13.18			47.10 ± 10.18		
Posttest 2	33.20 ± 11.66			49.40 ± 9.52		

*Significance p<0.05 level

Table 1 shows that the ANOVA test was used to compare the results of pretest, posttest, and follow-up PMS score. The mean value of pre-experiment is significantly higher than the mean value of post-experiment Premenstrual syndrome on two consecutive menstrual cycles at a 95% confidence interval which indicated that foot reflexology has a statistically significant effect over Premenstrual syndrome in adolescent girls.

Table 2: Comparison of Dysmenorrhoea scores within the group (N=10)

Dysmenorrhoea	Mean±SD Experimental Group (N=10)	F value	P-Value	Mean± SD Control Group (N=10)	F value	P-value
Pretest	7.0 ± 2.21	22.883406	0.000011*	7.4 ± 1.65	1.733948	0.2048
Posttest 1	5.20 ± 1.62			7.3 ± 1.42		
Posttest 2	4.30 ± 1.25			7.8 ± 1.03		

*Significance p<0.05 level

Table 2 shows that the ANOVA test was used to compare the results of the pretest, posttest, and follow-up dysmenorrhoea score. The mean value of Pre experiment is significantly higher than the mean value of post-experimentdysmenorrhoea on two consecutive menstrual cycles at a 95% confidence interval which indicated that foot reflexology has a statistically significant effect over dysmenorrhoea in adolescent girls.

The study also revealed that there is a positive weak correlation between PMS and Dysmenorrhoea with the r = 0.1395and p-value of 0.700713 (p< .05).

Conclusion:

Foot reflexology is a simple, safe, and non-pharmacological intervention method used to balance the body's vital energies and thus promote overall health. These study findings suggested that foot reflexology is effective in reducing the PMS and dysmenorrhoea.

Conflict of interests

The authors declare that there is no conflict of interest regarding the publication of this article.

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Consent for participation

Informed consent was obtained from all the participants.

Reference:

1. Ms. Divya Rohit1 and Ms. Anjali Tiwari, Effectiveness of Ginger Tea on dysmenorrhoea among adolescent girls –a pilot study, Int. J. Adv. Res. 2018, 6(9), 339-342
2. MahboubehValiani et al,Comparing the effects of reflexology methods and Ibuprofen administration on dysmenorrhea in female students of Isfahan University of Medical Sciences, IJNMR 2010; 15(Special Issue): 371-378
3. Marwa A. Mohamed, et al, DoFoot Reflexology and Relaxation Training decrease premenstrual symptoms in adolescent females, Int J Physiother. Vol 3(5), 522-528, October (2016)
4. Nasiri,et al, (2016),Physiological and Therapeutic Effects of Reflexology in Iran A Systematic Review. Depiction of Health; 7(1), 49-61.
5. Manhas, Sarika, Sabiya Asmat, and Tashi Dolker. "Knowledge about Menarche and Menstruation, among Tribal Females of Kargil." International Journal of Agricultural Science and Research (IJASR) 7. 5, Oct 2017, 605- 612
6. Baranwal, Amrita, Neelma Kunwar, and Devi Sarita. "Control and Prevention of Female Infertility Through Natural Herbs, Medicines And Yoga: A Review." International Journal of General Medicine and Pharmacy (IJGMP) 5 (2016): 1-6.
7. Malik, Mushtaq Ahmad, et al. "Rheum emodi as valuable medicinal plant." Intern J General Medic Pharmacy 5.4 (2016): 35-44.
8. Amin, Bengag, Allem Rachida, and Bekara Amina. "Anti-Inflammatory Activity of Citru Sessences Harvested Locally in Chlef Region (Algeria): In Vivo Study." International Journal of Applied and Natural Sciences (IJANS) 4.5 (2015): 21-30.
9. "Internet of Things: An Overview Shivani Shankar." International Journal of Computer Science and Engineering (IJCSE) 5. 4, Jun -Jul 2016; 23-30