ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 07, Issue, 07, pp.14208-14212, July, 2017

ORIGINAL RESEARCH ARTICLE

Open Access

AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF MINT LEAVES PASTE ON DYSMENORRHEA AMONG NURSING STUDENTS AT SGRD COLLEGE OF NURSING, VALLAH, AMRITSAR, PUNJAB

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ARTICLE INFO

Article History:

Received 15th April, 2017
Received in revised form
10th May, 2017
Accepted 26th June, 2017
Published online 31st July, 2017

Key Words:

Dysmenorrhea,
Menstruation,
Mint Leave Paste,
Nursing Student.

ABSTRACT

Adolescence in girls has been recognized as a special period which signifies the transition from girlhood to womanhood. One of the major physiological changes that take place in the adolescent girls is the onset of menarche, which is often associated with dysmenorrhea. Dysmenorrhea is the term for painful menstruation. Keeping this in view the present study is aimed to assess the effectiveness of mint leaves paste on dysmenorrhea among nursing students A quantitative research approach and pre experimental one group pre-test post-test design was used and the research setting was Sri Guru Ram Das College of Nursing, Vallah, Sri Amritsar. Total 60 nursing students were selected with Simple Random Sampling Technique. Numeric Pain Rating Scale was used to assess the effectiveness of mint leaves paste on dysmenorrhea. The study revealed that majority 55% of nursing students had severe pain during dysmenorrhea in Pre-test whereas majority 57% of nursing students had mild pain during dysmenorrhea in Post-test. Results depicted that pre-test mean dysmenorrhea score of nursing students was 6.3±2.04 and post-test mean dysmenorrhea score of nursing students was 2.68±1.71. This difference in the mean scores was statistically significant at $p<0.001$ level. The study concluded that, there was a decrease in level of pain during dysmenorrhea after administration of mint leave paste.

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Citation: Gurinderpal Kaur, Dr. Karuna Sharma and Ujala Joshi. 2017. "An experimental study to assess the effectiveness of mint leaves paste on dysmenorrhea among nursing students at sgrd college of nursing, vallah, amritsar, punjab", *International Journal of Development Research*, 7, (07), 14208-14212.

INTRODUCTION

'Dysmenorrhea is the leading cause of short-term class absenteeism.'

-Banikarim C.

Adolescence is a period from childhood to adulthood and is characterized by a spurt in physical, endocrinal, emotional and mental growth, with a change from complete dependence to relative independence. The period of adolescence for a girl is a period of physical and psychological preparation for safe motherhood.

As the direct reproducers of future generations, the health of adolescent girls influences not only their own health, but also the health of the future population. Almost a quarter of India's population comprises of girls below 20 years. One of the major physiological changes that take place in adolescent girls is the onset of menarche which is often associated with problems of irregular menstruation, excessive bleeding and dysmenorrhea. Out of these dysmenorrhea is one of the common problems experienced by many adolescent girls. (David, 2014). Dysmenorrhea literally means painful menstruation. But a more realistic and practical definition includes causes of painful menstruation of sufficient magnitude so able to capacitate day to day activities. (Dutta, 2013)

The term dysmenorrhea is derived from the Greek words 'dys' meaning difficult/painful, 'Meno' meaning month and 'rrhea' meaning flow. Most women begin having dysmenorrhea during adolescence, usually within four to five years of the first menstrual period. Painful periods become less common as women age. (Goswami Deepti. 2012). Dysmenorrhea can be classified as either primary or secondary based on the absence or presence of an underlying cause. Primary dysmenorrhea is defined as painful menstrual cramps without any evident pathology to account for them. It refers to any degree of perceived cramping pain during menstruation. A widely prevalent and common complaint among young women, primary dysmenorrhea is estimated to be present in 40-50% of them, with severe forms giving rise to work or school absenteeism in 15% of them. Surveys of adolescent girls show that over 90% of girls report having menstrual cramps. Secondary dysmenorrhea is dysmenorrhea which is associated with an existing condition. The most common cause of secondary dysmenorrhea is endometriosis, ovarian cysts, pelvic congestion and adenomyosis. (Dawood YM. 2006)

The prevalence of dysmenorrhea worldwide ranges from 15.8% to 89.5%. The prevalence of dysmenorrhea in India is ranges from 16.8% to 81%. (Latthe et al., 2006). The WHO estimated that 80% of the population in developing countries uses traditional treatment for their primary health care needs. Modern drugs and conventional medicines are often viewed as impersonal emphasizing crisis intervention. It is not only expensive but bring about side effects which are sometimes more dangerous than the disease itself. Home remedies are the commonly used treatment for dysmenorrhea (David, 2014). Natural and holistic treatments are gentle and safer alternative to alleviate the pain and discomfort of menstrual cramps. Among all remedies, Herbal supplement is found to be very beneficial for the treatment of menstrual problems. Prolonged result with no adverse action on user is one among the main advantages of using herbal cures. Herb like mint leaves are best recommended cures for the treatment of menstrual problems. (Wong, 2007). Mint is one of the herbs. It grows like a weed, is perfectly safe for use, and is an excellent remedy for reducing menstrual cramps. Carvone a monoterpene present in mint has antispasmodic effect which causes relieving of menstrual cramps and menthol component of mint has analgesic effect causes relieving of dysmenorrhea. (Souza, 2012)

Need of the study

Menstruation is a normal, healthy occurrence for many years in life. Yet many women, across a range of different cultures, experiences menstrual problem that range from mild discomfort to acute pain. Although most women have some physical or emotional changes or discomfort linked to menstrual cycle, a small number of about 5% find that the problems are more serious and may have to seek some kind of treatment. (Gulani, 2012). Dysmenorrhea is the most common gynecological problem in women in all ages. Most adolescence experience dysmenorrhea in the first 3 years after menarche. Young adult women ages 17 to 24 years are most likely to report painful menses between 50% and 80%of women report some level of discomfort associated with menses and 10 to 18% report severe dysmenorrhea. It has been estimated that up to 10% of women have severe pain which interfere with their functioning for 1-3 days a month. (Suzanne C. Smeltzer, Brenda G. Bare, Janice L. Hinkle, Kerry H. Cheever. 2010). A cross-sectional descriptive study was conducted in Rewa, Madhya Pradesh to evaluate the menstrual problem specially dysmenorrhea and its severity in female medical students and its effect on their regular activities. The study was conducted among 107 female medical students. The prevalence of dysmenorrhea was 73.83%; approximately 4.67% of dysmenorrhic subjects had severe dysmenorrhea. Among female medical students who reported dysmenorrhea 31.67% and 8.68% were frequently missing college & classes respectively. Premenstrual symptom was the second most (60.50%) prevalent disorder and 67.08% reported social withdrawal. Dysmenorrhea and PMS is highly prevalent among female medical students, it is related to college/class absenteeism, limitations on social, academic, sports and daily activities. (Singh et al., 2008). A study conducted among Taiwanese college of nursing students showed that 85% of nursing students were suffering from dysmenorrhea. This was affecting their curricular, co-curricular activities as well as their clinical practice. (Jen et al., 2009). The treatment available in the present scenario is not giving enough relief from dysmenorrheal estimates of the effectiveness of current treatments including oral Contraceptives and nonsteroidal anti-inflammatory drugs ranging from 64 to 90% of patients but some women have intolerable side effects like upset and infertility. (Jennifer, 2004). Studies revealed that pharmacological measure causes unwanted side effects. Approximately 30% adolescents use medications to manage dysmenorrhea and about 80 % do not use prescription of medication. Several non-pharmaceutical approaches to alleviate the dysmenorrhea exist. Alternative and complementary therapy is widely accepted and available. (Campbell, 1999).

Herbal supplement is found to be very beneficial for the treatment of menstrual problems. Prolonged result with no adverse action on user is one among the main advantages of using herbal cures. Herb like mint leaves, is best recommended cure for the treatment of menstrual problems. (Wong, 2007). It is supported by the study conducted by Ramya M. to assess the effectiveness of the mint extract upon dysmenorrhea among the students at Apollo school of Nursing, Chennai. Pre experimental design was adopted and purposive sampling method was used and 35 students were selected as samples. The level of dysmenorrhea was assessed before and after mint extracts administration for consecutive days, 5 days before menstruation and 3 days after menstruation. The pretest level dysmenorrhea score of students were high, Mean = 6.46, SD = 2.57 in comparison with the score of posttest were Mean = 1.2, SD = 1.26 the difference between the experimental pretest and posttest is found to be statistically proven to be significant ($p<0.001$). The result could be attributed to the effectiveness of the mint extract. (Ramya, 2008). Keeping in view the above findings in literature, dysmenorrhea can be considered as prevalent problem, which adversely affect the day to day activities of nursing students. The investigator realized that many nursing students suffering from dysmenorrhea go into absenteeism at class and clinical. After doing the extensive review of literature regarding effect of mint leaves on dysmenorrhea the investigator is motivated to undertake the study to assess the effectiveness effect of mint leaves on dysmenorrhea.

Objectives of the study

- To assess the level of dysmenorrhea among nursing students.
- To administer the mint leaves paste for dysmenorrhea among nursing students.
- To compare the pre-test and post-test level score of dysmenorrhea among nursing students.
- To find out the association between the post-test level of dysmenorrhea with selected socio-demographic variables among nursing students.

Delimitations

The study was delimited to

- 60 Nursing students
- those who are suffering with dysmenorrhea
- the age group of 18-28 years
- those who are studying at SGRD College of Nursing, Vallah Amritsar.
- those nursing students who are residing in the nursing hostel.

MATERIALS AND METHODS

Research Approach

Quantitative research approach was considered to be appropriate for the present study.

Research Design

Pre Experimental One Group Pre-test Post-test Design was utilized to assess the effectiveness of mint leaves paste on dysmenorrhea among nursing students. This includes manipulation with randomization without control group. Independent variable includes Mint leaves paste administration and Dependent variable includes dysmenorrhea.

Research Setting

The present study was conducted on the nursing students studying in Sri Guru Ram Das College of Nursing, Vallah, Sri Amritsar (Punjab).

Target Population

In the present study the target population was nursing students suffering with Dysmenorrhea in Sri Guru Ram Das College of Nursing, Vallah, Amritsar (Punjab).

Sample

Sample size of the study comprised of 60 Nursing Students.

Sampling Technique

Under Probability Sampling, Simple Random Sampling Technique was adopted to select subjects. With Lottery Method 60 students were selected among 130 willing participants who fulfill inclusion and exclusion criteria.

Method of Data Collection

Section 1: Structured Questionnaire to assess socio-demographic variables of the nursing students.

Section 2: A Standardized tool i.e. Numeric Pain Rating Scale developed by McCaffery Margo and Beebe Alexandra (1989) was used to assess the effectiveness of mint leaves paste on dysmenorrhea among nursing students.

Description of Tool

The tool consists of two parts:

Part I: This part includes socio-demographic variables of the participant. Socio-demographic variables include age (in years), residence, type of family, educational status, family income per month (in rupees), age at menarche (in years), interval of menstrual cycle (in days), duration of menstrual cycle (in days) and menstrual flow..

Part II: As the study was concerned to assess the effectiveness of mint leaves paste on dysmenorrhea among nursing students. So, a Standardized tool i.e. Numeric Pain Rating Scale developed by McCaffery Margo and Beebe Alexandra (1989) was used, as the tool was freely available on net under public domain. Numeric Pain Rating Scale is an 11-point scale from 0-10 where '0' representing “no pain” and ‘10’ representing “worst pain imaginable”. The maximum possible score of the tool was 10 and minimum score was 0. A total score of 0 indicates No Pain, 1-3 indicates Mild Pain, 4-6 indicates Moderate Pain and 7-10 indicates Severe Pain.

Validity of Tool

Validity of the tool was confirmed by expert’s opinion regarding the relevance of items. The tool was circulated among experts from the field of Obstetric and Gynecological Nursing. According to their valuable suggestions modification was made in Socio demographic variables i.e. Part-I and Numeric Pain Rating Scale i.e. Part-II.

Reliability of Tool

Reliability of the standardized tool i.e. Numeric Pain Rating Scale was computed by applying Test Retest Method using Karl Pearson’s Coefficient of Correlation and Spearman-Brown Prophecy Formula. The reliability (r′) obtained was 0.84. Hence the tool was found to be reliable and feasible for the purpose of the study.

Pilot Study

After obtaining formal approval from the Principal, Government Nursing College, Amritsar the pilot study was conducted among hostler students residing in Government Nursing College, Amritsar. The pilot study was conducted in the month of December from 10th December to 20th December, 2014 to ensure the reliability of the tool and feasibility of the study. The sample consisted of 10 students. Subjects were chosen by simple random sampling technique. Purpose of the study was explained to the subjects. The subjects were assured about anonymity and confidentiality of the information provided by them and written consent was taken from those who were willing to participate in the study. Pre-test was conducted using Numeric Pain Rating Scale. After pre-test intervention was given to the study participants i.e.

administration of 5 gram Mint Leave paste prepared from 3 grams of mint leaves powder mix with 2 grams of honey. It was given orally twice a day, 2 days before menstruation and 3 days during menstruation. On 5th day after intervention Post-test was conducted by using Numeric Pain Rating Scale. The collected data was analyzed by using descriptive and inferential statistics. The study was found feasible. The time taken by each respondent was average 10-15 minutes. The plan for data collection remained to be same as for final study because the investigator didn't face any major problem while conducting pilot study.

Data Collection Procedure

Final data was collected in the month of February and March from 13th February to 18th March, 2017 after getting written permission from the Principal of the SGRD College of Nursing, Vallah Amritsar. Purpose of the study was explained to the subjects. The subjects were assured about anonymity and confidentiality of the information provided by them and written consent was taken from the students. Total 60 students were selected by using simple random sampling technique. Pre-test was conducted using Numeric Pain Rating Scale. After pre-test intervention was given to the study participants i.e. administration of 5 gram Mint Leave paste prepared from 3 grams of mint leaves powder mix with 2 grams of honey. It was given orally twice a day, 2 days before menstruation and 3 days during menstruation. On 5th day after intervention Post-test was conducted by using Numeric Pain Rating Scale. The collected data was analyzed by using descriptive and inferential statistics. The time taken by each respondent was average 10-15 minutes. At the end of successful data collection conveyed thanks to the concerned authority and wound up the study.

Ethical Consideration

- Ethical clearance was taken from the ethical committee of the SGRD College of Nursing Vallah, Amritsar.
- Permission was taken from the Principal, Government College of Nursing, Amritsar.
- Permission was taken from the Principal, SGRD College of Nursing, Vallah, Amritsar
- Written Consent was taken from the subjects before conducting the study.

Plan of the data analysis

Analysis and interpretation of data was done by using descriptive and inferential statistics such as percentage, mean, mean percentage, standard deviation, t-test and chi square.

RESULTS

Section I: Description of socio-demographic variables by using frequency and percentage.

- Socio-demographic variable of nursing students shows that 22 (37%) students belong to age group 24-26 years, 31 (52%) students reside in urban area, 32 (53%) students lived in nuclear families, 21(35%) students studied in B.Sc. Nursing and 51 (85%) students had family income above Rs. 20,000/-. Majority 38 (63%) students had menarche at 13-14 years, 31 (52%) students had menstrual cycle >28 days, 35 (58%) had menstrual flow between 4-5 days and 23 (38%) students had normal menstrual flow.

Section II: Assessment of level of dysmenorrhea among nursing students.

Objective 1: To assess the level of dysmenorrhea among nursing students.

- Mean dysmenorrhea score of nursing students was 6.3±2.04 and mean percentage was 63%.
- 55% students had severe pain (7-10) during dysmenorrhea.

Section III: Comparison of the pre-test and post-test level score of dysmenorrhea among nursing students by using 't' test.

Objective 3: To compare the pre-test and post-test level score of dysmenorrhea among nursing students.

- Data in Table 1 depicts that the pre-test mean dysmenorrhea score of nursing students was 6.3±2.04 and post-test mean dysmenorrhea score of nursing students was 2.68±1.91. This difference in the mean scores was statistically significant at $p<0.001$ level.

Table 1. Comparison of pre-test and post-test level score of dysmenorrhea among nursing students

N = 60

Nursing Students	n	Range	Dysmenorrhea Score			df	't'
			Mean	SD	Standard Error		
Pre Test	60	2-9	19.64	5.44	0.26	59	20.5***
Post Test	60	0-6	24.22	5.81	0.22		

Maximum Score = 10 Minimum Score = 0 *** Significant at p< 0.001 level

Section IV: Association of level of dysmenorrhea among nursing students with their selected socio demographic variables by using chi square test.

Objective 4: To find out the association between the post-test level of dysmenorrhea with selected socio-demographic variables among nursing students.

- There was statistically significant association between the post-test level of dysmenorrhea with the selected socio-demographic variables such as age at menarche (in years) and menstrual flow at $p<0.05$ level of significance.
- Socio-demographic variables such age (in years), residence, type of family, educational status, family income per month (in rupees), interval of menstrual cycle (in days) and duration of menstrual cycle (in days) had statistically non-significant association with post-test level of dysmenorrhea among nursing students at $p<0.05$ level of significance.

DISCUSSION

The first objective of the study is to assess the level of dysmenorrhea among nursing students. Present study indicates mean dysmenorrhea score of nursing students was 6.3±2.04 and mean percentage was 63%. There were 07(12%) students had mild pain during dysmenorrhea, 20(33%) students had moderate pain during dysmenorrhea and 33(55%) students had severe pain during dysmenorrhea.

Hence, it can be said that nursing students had severe pain during dysmenorrhea. These findings are supported by a study conducted by Nayana S. George et al (2014) to assess characteristics and symptoms experienced during menstruation. Study was conducted among 233 adolescent girls and the prevalence of dysmenorrhea in adolescent girls was found to be 146(62.70%). Out of 233 samples 28(12%) had mild pain, 77(33%) had moderate pain and 41(17.6%) had severe pain during menstruation. The third objective of the study is to compare the pre-test and post-test level score of dysmenorrhea among nursing students. Present study reveals that pre-test mean dysmenorrhea score of nursing students was 6.3±2.04 and post-test mean dysmenorrhea score of nursing students was 2.68±1.71 and this difference in the mean scores was statistically significant at $p<0.001$ level. Hence it can be said that Mint Leave paste was effective. Similar findings have been reported by Jyothi Sree (2015) conducted a study to assess the effectiveness of *Mentha spicata* paste on dysmenorrhea among adolescent girls in Narayana College of Nursing, Nellore. 60 adolescent girls were selected and Intervention was given per each sample for 4 days before menstruation. The results indicated that the pre-test mean dysmenorrhea score of nursing students was 0.12±7.14 and post-test mean dysmenorrhea score of nursing students was 0.06±0.38 and This difference in the mean scores was statistically significant at $p<0.05$ level.

The fourth objective of the study is to find out the association between the post-test level of dysmenorrhea with selected socio-demographic variables i.e. age (in years), residence, type of family, educational status, family income per month (in rupees), age at menarche (in years), interval of menstrual cycle (in days), duration of menstrual cycle (in days) and menstrual flow. Present study reveals that age (in years), residence, type of family, educational status, family income per month (in rupees), interval of menstrual cycle (in days) and duration of menstrual cycle (in days) showed that there was statistically non-significant association between the post-test level of dysmenorrhea with these selected variables at $p<0.05$ level. Hence, these socio-demographic variables have no effect on the effectiveness of mint leaves paste on dysmenorrhea among nursing students. Similar findings have been reported by Jyothi Sree (2015) conducted a study to assess the effectiveness of *Mentha spicata* paste on dysmenorrhea among adolescent girls in Narayana College of Nursing, Nellore. 60 adolescent girls were selected and Intervention was given per each sample for 4 days before menstruation. The results indicated that the variables like age, menstrual pattern, days of cycle and education did not have any significant association with effectiveness of mint leaves paste.

Conclusion

The overall findings revealed that, there was a decrease in level of pain during dysmenorrhea after administration of mint leave paste. Hence it can be said that mint leave paste was effective. There was statistically significant association between the post-test level of dysmenorrhea with the selected socio-demographic variables such as age at menarche (in years) and menstrual flow at $p<0.05$ level of significance.

Acknowledgements

Authors are thankful to the management of Sri Guru Ram Das College of Nursing, Vallah, Sri Amritsar, Punjab for providing necessary research facility to carry out this research project.

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