

Effectiveness of Muscle Stretching Exercises and Dry Ginger Versus Muscle Stretching Exercises on Primary Dysmenorrhea Among Nursing Students: An extensive Comparative Evaluation

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Abstract: This paper presents a study to assess “Effectiveness of muscle stretching exercises and dry ginger versus muscle stretching exercises on primary dysmenorrhea among nursing students: An extensive comparative evaluation.

Keywords: Muscle stretching exercises, dysmenorrhea, dry ginger powder.

1. Introduction

Today's teenager is tomorrow's mother, and yesterday's girl is today's adolescent. The term "adolescent" comes from the Latin word "adolescere," which means "to grow up." Around one-fifth of the world's population is between the ages of 10 and 19, a period when they are transitioning from childhood to adulthood. Today, 1.2 billion teenagers find themselves at a fork in the path between childhood and adulthood. India is home to 243 million of them. They are under a lot of physical and psychological stress as a result of the changes in their bodies (Eswi et al 2012).

Menarche is a significant milestone in a woman's pubertal development. It generally strikes between the ages of ten and fourteen. Menstruation is still regarded a nasty phenomenon in certain places, and women are also considered dirty during menstruation. Menstruation, on the other hand, is a natural physiological process.

Dysmenorrhea is a term for unpleasant menstrual cramps that originate in the uterus. It is a prevalent gynaecological disease that affects women of all ages and nationalities. It's usually classified into two categories: primary and secondary. Menstrual pain without an organic cause is called primary dysmenorrhoea, while menstrual pain with an identified cause is called secondary dysmenorrhoea. Secondary dysmenorrhoea is caused by a variety of factors. Dysmenorrhoea causes a lot of people to miss work and school (13 percent to 51 percent women have been absent at least once and 5 percent to 14

percent are often absent owing to the severity of symptoms). Dysmenorrhea is connected with a restriction of activity and absence from school or work, especially when it is severe. Sixty percent of the dysmenorrhoeic girls were in severe or moderate pain, with severe cases requiring no medication or only occasional over-the-counter (OTC) analgesics in 15% of cases and mild cases requiring no medication or just occasional OTC analgesics in around 30% of cases. In another research, 53% of people said they were limited in their activities, while 12% said they were missing.

2. Problem Statement

“Effectiveness of muscle stretching exercises and dry ginger versus muscle stretching exercises on primary dysmenorrhea among nursing students: An extensive comparative evaluation”

3. Study Objectives

- To assess the level of severity of primary dysmenorrhoea among B.Sc. nursing students.
- To assess level of discomfort during primary dysmenorrhoea among B.Sc. Nursing students.
- To assess effectiveness of muscle stretching exercises and dry ginger versus muscle stretching exercises on primary dysmenorrhoea among B.Sc. nursing students.
- To assess effectiveness of muscle stretching exercises and dry ginger versus muscle stretching exercises on discomfort among B.Sc. nursing students with primary dysmenorrhoea.
- To find the association between the pretests level of primary dysmenorrhoea among B.Sc. Nursing students with selected demographic and menstrual variables.
- To find the association between the pretests level of discomfort among B.Sc. Nursing students with primary dysmenorrhoea and selected demographic and menstrual

variables.

Hypothesis:

Hypotheses is tested at 0.05 level of significance.

Alternative Hypothesis:

H₁- There is a significant association between the severity of primary dysmenorrhoea among B.Sc. Nursing students with Age at Menarche.

H₂- There is a significant association between the severity of primary dysmenorrhoea among B.Sc. Nursing students with length of menstrual cycle.

H₃-There is a significant association between the severity of primary dysmenorrhoea among B.Sc. Nursing students with duration of menstruation in days.

H₄- There is a significant association between the severity of discomforts among B.Sc. Nursing students with primary dysmenorrhoea and family history of dysmenorrhoea.

H₅-There is a significant association between the severity of discomforts among B.Sc. Nursing students with primary dysmenorrhoea and onset and duration of dysmenorrhoea.

H₆ - There is a significant association between the severity of discomforts among B.Sc. Nursing students with primary dysmenorrhoea and treatment taken to relieve primary dysmenorrhoea.

Null hypothesis:

H₀-There is no significant difference in reduction of pain and discomforts that occurs during primary dysmenorrhoea after muscle stretching exercises and dry ginger therapy regimen group when compared to only muscle stretching exercises group.

Limitation:

The study includes only BSc Nursing students from selected college of nursing.

Students studying in other nursing courses like GNM, PB BSc Nursing, and MSc Nursing were not included.

Variables:

Variables are an attribute of a person or objects that varies, that is takes on different values.

Independent variables: Independent variable is muscle stretching exercises and dry ginger.

Dependent variables: Dependent variable was pain and discomfort during the primary dysmenorrhea

Demographic variable: In this study, demographic variables such as age, body weight and body mass index. Menstrual variables are age at menarche, length of menstrual cycle, duration of menstruation, family history of dysmenorrhoea, onset and duration of dysmenorrhoea and treatment taken to relieve dysmenorrhoea.

Research Design: Quasi experimental design (Interrupted time series design.)

Setting: The study was conducted at selected Nursing Colleges in Kanpur, Uttar Pradesh.

Population: The population comprised of selected samples, i.e. under graduate students studying BSc Nursing Course.

Sample size: The sample consisted of 120 under graduate students studying BSc Nursing Course. Who fulfill the criteria for inclusion in the study.

Sampling Technique:

The investigator adopted a Purposive sampling technique.

Sampling criteria:

B.Sc. Nursing student of Selected College of Nursing in Kanpur, U.P.

Inclusion criteria:

- All BSc Nursing female students in the age group (17-19 years).
- Students who had attained menarche and have primary dysmenorrhea.
- Students who are willing to participate.

Exclusion criteria:

- Students who are physically handicapped.
- Students suffering from any condition in which exercise is contraindicated (e.g., recent surgery, heart disease, respiratory disease).
- Students with severe dysmenorrhea.
- Students were on any medical treatment or found to have a secondary cause on gynecological checkup.
- Students who were married or pregnant.
- Students whose period is irregular and absent for more than 2 months.

Description of the tool:

The data collection tool consists of three sections:

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Tool 1: Demographic data (variables) and menstrual variables.

Tool 2: Primary dysmenorrhea screening questionnaire

Tool 3 Part I: Menstrual Distress Rating Scale

Part II: Numerical Rating Scale

Tool 1: Demographic data to assess the baseline characteristics of subjects consisted of 7 items seeking information about background of subjects. (Age in years, weight and BMI.

Tool 2: Primary dysmenorrhea screening questionnaire: To screen out the students with primary dysmenorrhea from total population and this questionnaire consisted of 10 items seeking information about primary dysmenorrhea. The alternative gave as normal, mild, moderate, and severe and these responses were scored by 0, 1, 2, and 3.

Scoring technique:

Final scoring of primary dysmenorrhea screening questionnaire:

Mild primary dysmenorrhea: 8-14

Moderate primary dysmenorrhea: 15-22

Severe primary dysmenorrhea: 23-30

Does not have primary dysmenorrhea: 0-7

Tool 3:

Part 1:

Menstrual Distress Rating Scale helps to detect discomforts of primary dysmenorrhea. The tool consisted of 36 items. The alternative gave as frequently, two to three times, never and these responses were scored by 3, 2, and 1. Each answer scored based on alternative responses as 3, 2, 1 and the total score was 108.

Part 2:

Numerical pain scale: The scale consisted of ranked choices that are no pain, mild

pain, moderate pain, severe pain very severe pain and worst possible pain. The pain scale is divided into 10 parts. Each choice was assigned by a corresponding number. The scale was a standardized scale. (Jensen & Mcfarland 1993).

Data collection strategy: (Primary Method and Secondary method)

Primary Method:

Formal administrative permission was taken from the Principal s of selected college of nursing and Institutional Ethical and Research Committee. Participants were selected according to the selection criteria. Informed consent was taken from each selected student. The researcher went to the Nursing Colleges on given date and the purpose of the study was explained to the students and confidentiality of their identity and responses was assured in order to ensure their cooperation and prompt response. Data was collected from 5 February 2019- 5 February 2020.

Intervention included dry ginger powder and muscle stretching exercises. In one group combination of intervention i.e. ginger powder and active exercises were used whereas in another group only active exercises were taught. Dry ginger powder was provided in powder form to group 1 and muscle stretching exercises were taught to both the groups. Dry ginger powder was available in market in 200 gm packing (catch ginger powder). Small sachets of 500mg each was prepared by using weighing scale. The protocol of consuming these sachets was, 500mg ginger powder in plain water twice in a day from four days before starting menstruation to till the end of the menstruation day. Muscle stretching exercises as per literature. The protocol of performing these exercises was, twice in a day for 20 min except on the day of menstruation for till second post-test.

To measure compliance of exercises Subjects were given menstrual diary which included dates of the month. Subjects had to mark the menstrual flow days with red ink whereas in the left days of calendar they had to tick mark with blue ink whether they performed exercises or not according to the protocol. Follow up Performa was also given to subjects to check the compliance of ginger. Subjects had to write the number of sachets of ginger powder they have consumed in follow up Performa. These were collected at the end of first month and third month i.e. at 30 and 90 days. Also, the post intervention assessment of the severity of menstrual distress and intensity & duration of menstrual pain was done at the end of 1st and 3rd month.

4. Results

A. Demographic and Menstrual Variable Description

With regard to the age in the experimental group, majority 66.66 %) were in the age group of 17-18 years and in comparison group majority 63.33%) were in the age group of 17-18 years. Regarding the body weight in the experimental group, majority 71.67%) were weighed in between 40-50 kg

and in the comparison group majority (66.67%) in between 40 - 50 kg. Considering the body mass index, majority (75%) is in the range between 20 - 25 in experimental and (66.67 %) in comparison group.

Considering the age at menarche in the experimental group, (60%)majority attained menarche in the age group of 11-12 years and in the comparison group (53.33%) in the age group of 11-12 years. In experimental group most of the participant's length of menstrual cycle (60%) were 31-35 days and in comparison, group (50%) were 26-30 days.

Experimental group most of the participants (80%) duration of menstruation in days were 3-6 days and in comparison, group (63.33%) were 3-6 days. In experimental group (71.67%) were having no family history of dysmenorrhoea and in comparison group most of the participants (68.33%) were having no family history. Experimental group most of the participants (85%) were having dysmenorrhoea up to 48 hours and in comparison, group (73.33%) were having dysmenorrhoea up to 48 hours. Experimental group (70%) were taken self-medication and complementary therapy but in comparison group (60%) were taken self-medication and complementary therapy.

These findings were consistent with the study conducted by Agarwal, (2010) conducted an explorative survey technique with a co-relational approach to find out the prevalence of primary dysmenorrhoea in adolescent girls from the study, he concluded that primary dysmenorrhoea is a very common problem among adolescent girls.

The first objective was to assess the level of severity of primary dysmenorrhoea among B.Sc. nursing students.

In the experimental group, 16.67% had mild level of primary dysmenorrhoea, 73.33% had moderate level of primary dysmenorrhoea, 6% comes under severe level of primary dysmenorrhoea and in the comparison group 18.33% had mild level of primary dysmenorrhoea, 68.33% had moderate level of primary dysmenorrhoea, 13.34% had severe level of primary dysmenorrhoea.

In the experimental group, 18.33% had mild level of level of discomfort during primary dysmenorrhoea, 45% had moderate level of discomfort, 36.67% comes under the severe level of discomfort and in the comparison group 8.33% had mild, 60% had moderate and 31.67% severe level of discomfort during primary dysmenorrhoea respectively. Mean pain score at pretest in experimental group was 5.09+ 2.33 which decreased to 3.85+ 2.42at (30 days) first post test, 2.91+ 2.45 at (90 days) second post test and the difference is statistically significant as per t-test whereas in comparison group mean pain score decreased from 5.13+1.99 to 4.43+1.99 at (30 days) first post test, 4.13+ 2.12 at 90 days follow up and difference is significant at 90 days) second posttest. When comparison is made within 30 days and 90 days posttests in experimental group, pain score reduced significantly as per t test which indicates that effect of intervention further reduces the pain when practiced for long term, whereas in comparison group this difference is not significant which indicates that the effect of intervention was same at 30 days and 90 days and also Analysis of variance (ANOVA) was used to analyze data to find out the outcome of repeated measurers the result reveals that f-ratio

value of experimental group is 16.80477 ($P < .00001$) and comparison group is $F = 3.51515$ ($P = .031837$). The result is significant at $p < .05$, i.e. active exercises and dietary ginger are more effective than the active exercises alone. Hence null hypothesis H_0 is rejected.

5. Conclusion

The present study concludes that combination of intervention i.e. muscle stretching and dry ginger powder if used for long term basis is much more effective than muscle stretching exercises alone. So, these methods should be preferred instead of over the counter medication. It also concludes that compliance needs to be improved among subjects as compliance with the intervention was found poor among subjects.

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