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Effectiveness of music assisted versus without music assisted progressive muscle relaxation on symptoms of dysmenorrhoea among nursing students in selected hostels Mangaluru

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Abstract

Background: Progressive muscle relaxation (PMR) is an accessible and simple technique that can be performed in a home setting. Although PMR can be performed in silence, research indicates that progressive muscle relaxation is especially effective when paired with music. An abundance of research has examined the relationship between music and relaxation, and on a broader level, the relationship between music and stress and music and pain. In various capacities, research indicates that music is an effective tool in distracting individuals from pain as well as dysmenorrhoea.

Methodology: An experimental approach with quasi experimental design was used. The study was conducted at different nursing hostels of Mangaluru. The sample comprised of 60 students. The sample was selected using purposive sampling technique and randomly assigned to experimental and control group. Data collection was done from 8th February to 4th March 2017. Formal written permission was obtained from the nursing college authorities. Data was collected using menstrual discomfort rating scale. Data was analyzed using descriptive and inferential statistics.

Results: The result of the study showed that Group III had significant higher level of dysmenorrhoea response to menstrual discomfort scale score than of Group I and II. Highest percentage (56.7%) of sample in the Group I showed moderate level of menstrual discomfort whereas in the Group III majority (66.7%) showed severe pain. Bonferroni t test showed the difference was significant at 0.05 level of significance.

Conclusion: The findings of the study support that progressive muscle relaxation with music is more effective method to reduce dysmenorrhoea than only PMR. PMR with music can be used as an alternative method in dysmenorrhoea.

Keywords: Effectiveness; progressive muscle relaxation; behavioral response to menstrual discomfort

Introduction

Adolescence is a period of transition between childhood and adulthood. This period begins with gradual appearance of secondary sexual characteristics at about 11 or 12 years of age and ending with cessation of body growth at 18-20 years. [1] The national prevalence of dysmenorrhoea is 70–90%, which is comparable to that reported worldwide. [2]

The phenomenon of menstruation is peculiar to humans and apes. More than a medical concern, menstruation has social, economic, psychological and religious implications. It is associated with “women hood” in most cultures. Menstruation is a normal physiological cycle, common to all females of the reproductive age group. The initiation of menstruation takes place during early adolescence period. Menstruation is associated with several physical and psychological problems, which are likely to be complicated by a confused state caused by incomplete or wrong information among adolescents. [3]

Menstrual cramps affect women during the time of their monthly menstrual periods. As a symptom of the menstrual period, these cramps can range from being hardly noticeable to unbearably painful. While over-the-counter medicines can be helpful, the progressive muscle relaxation exercise can help women to ease the pain associated with menstruation. Doing progressive muscle relaxation exercises can be very helpful for women to counteract cramps and tensing their muscles. To do this, focus on one part of the body at a time; start with the feet, legs, buttocks and hips, then move into the back, arms, shoulders, neck and

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Face. When moving your concentration to different parts of the body, alternative between tensing and breathing more even as well. Progressive muscle relaxation exercises are effective in reducing severe menstrual cramps. [4]

Materials and Method

A experimental research approach was adopted to assess the dysmenorrhoea symptoms among nursing students in selected hostels, Mangaluru. Quasi experimental research design used for thid study. In this study, symptoms of dysmenorrhoea among nursing students was the research variable, which was observed after progressive muscle relaxation with music and without music without. This study was be conducted in Laxmi College of nursing, Athena College of nursing, Unity academy of education, Mangaluru. 60 sample was selected for the study [20 experimental group I, 20 experimental group II and 20 control group]. An official permission for conducting the study was obtained from the director and administrative departments of selected nursing colleges. Informed consent was obtained from the sample before initiating the study. Data was collected using demographic proforma and menstrual discomfort rating scale. Demographic profoma was used for the assessment of demographic and clinical variables. Menstrual discomfort rating scale consists of a 25 items. Collected data will be statistically analysed and compared to find the significance of difference among the progressive muscle relaxation with music and without music.

Results

Majority (60%) of samples in Group I and Group II (55%) of samples were in age group of 19 years of age. Whereas

100% of samples in Group III were in the age of above 20 years. Group I (10%) and Group II (15%) least samples in the age of above 20 years.

Majority of subjects in Group I (50%), Group II (45%) and Group III (40%) between age group of 11-12 years. Least percentage of samples in Group I (15%) and Group II (10%), Group III (10%) in the age group of 13 years and above.

Highest percentage of subjects in Group I (90%), Group II (60%) and Group III (85%) subjects sometimes used any alternatives and Only Group II (5%) subjects were always using alternatives.

highest percentage of subjects in Group I (80%) and Group II (90%), Group III (95%) had moderate level of menstrual discomfort and least percentage of subjects in Group I (20%),

Group II (10%), Group III (5%) had severe level of menstrual discomfort.

Post-test 1, Group I (70%) and Group II (30%) had mild level of pain. The subjects in the Group I (30%) and Group II (65%) and III (95%) had moderate level of menstrual discomfort. Subjects were in Group II and III had severe level of discomfort. Post-test 2, the subjects in the Group I (100%), Group II (60%) had mild level of menstrual discomfort. The subjects in the Group II (40%) and Group III (95%) had moderate level of menstrual discomfort. The subjects in Group III (5%) had severe level of discomfort. Post-test 3, the subjects in the Group I (100%) and II (85%) had mild level of menstrual discomfort. The subjects in the Group II (15%) and Group III (95%) had moderate level of menstrual discomfort Group III had 5% severe discomfort. There was a significant difference between the pre-test and post-test discomfort scores in the Group I and Group II.

Table 1: Frequency and Percentage Distribution of Sample according to Demographic variables $N_I=20$, $N_{II}=20$, $N_{III}=20$

Demographic variables	Group I		Group II		Group III	
	f	%	f	%	f	%
Age in years						
18	6	30	6	30	0	0
19	12	60	11	55	0	0
>20	2	10	3	15	20	100
Age at menarche						
9-10 years	0	0	0	0	7	35
10-11 years	3	15	4	20	3	15
11-12 years	10	50	9	45	8	40
13 years and above	7	35	2	10	2	10
Duration of menstruation						
<3days	0	0	2	10	1	5
3-4days	1	5	3	15	9	45
5-6days	15	75	10	50	8	40
>6days	4	20	5	25	2	10
Is your menstruation regular?						
Yes	20	100	20	100	20	100
No	-	-	-	-	-	-
Do you experience pain during menstruation?						
Yes	20	100	20	100	20	100
No	-	-	-	-	-	-
Do you take medication?						
Never	2	10	7	35	3	15
Sometimes	18	90	12	60	17	85
Always	0	0	1	5	0	0

Table 2: Frequency and Percentage Distribution of the Dysmenorrhoea Students based on Pre-test Menstrual discomfort rating scale score in the Group I, Group II and Group III $N_I=20, N_{II}=20, N_{III}=20$

Level of pain	Range of score	Group I		Group II		Group III	
		F	%	f	%	f	%
None	0	0	0	0	0	0	0
Mild	1-17	0	0	0	0	0	0
Moderate	18-34	16	80	18	90	19	95
Severe	35-50	4	20	2	10	1	5

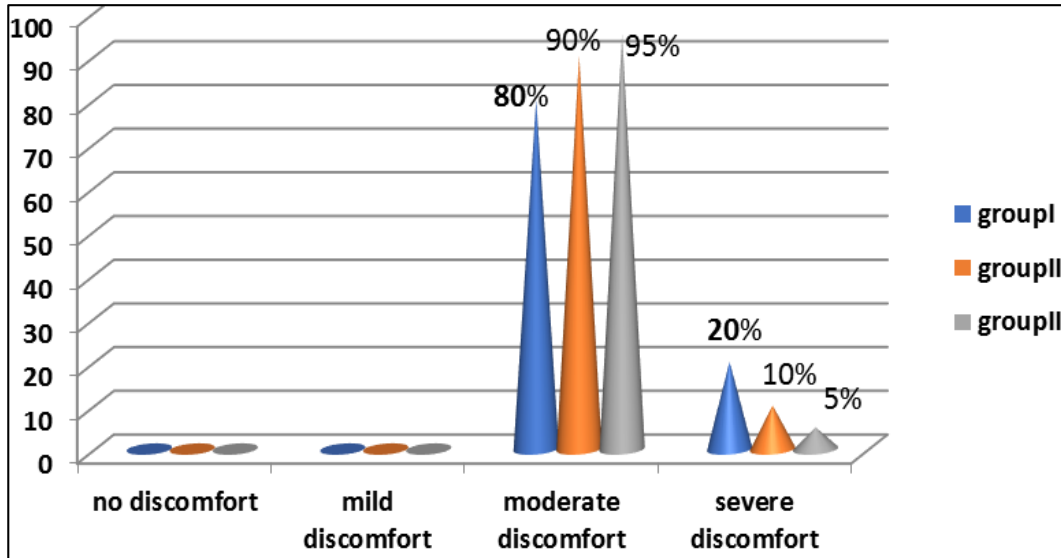


Table 3: Frequency and Percentage Distribution of Dysmenorrhoea Students based on Post-test Menstrual discomfort rating scale score in the Group I, Group II and Group III $N_I=20, N_{II}=20, N_{III}=20$

Level of pain	Range of score	Group I						Group II						Group III					
		Post-test 1		Post-test 2		Post-test 3		Post-test 1		Post-test 2		Post-test 3		Post-test 1		Post-test 2		Post-test 3	
		f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
No pain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mild	0-17	14	70	20	100	20	100	6	30	12	60	17	85	0	0	0	0	0	0
Moderate	18-34	6	30	0	0	0	0	13	65	8	40	3	15	19	95	19	95	19	95
Severe	35-50	0	0	0	0	0	0	1	5	0	0	0	0	1	5	1	5	1	5

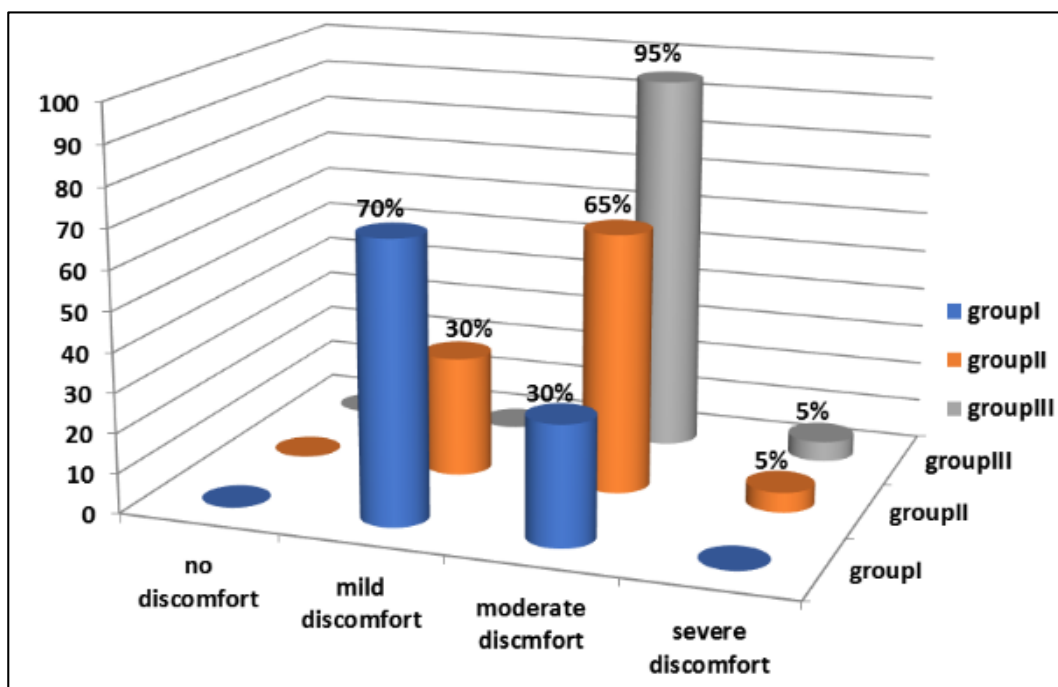


Fig 4: Bar Diagram Showing Percentage Distribution of Dysmenorrhoea Students in terms of menstrual discomfort rating scale score in the Post-test 1

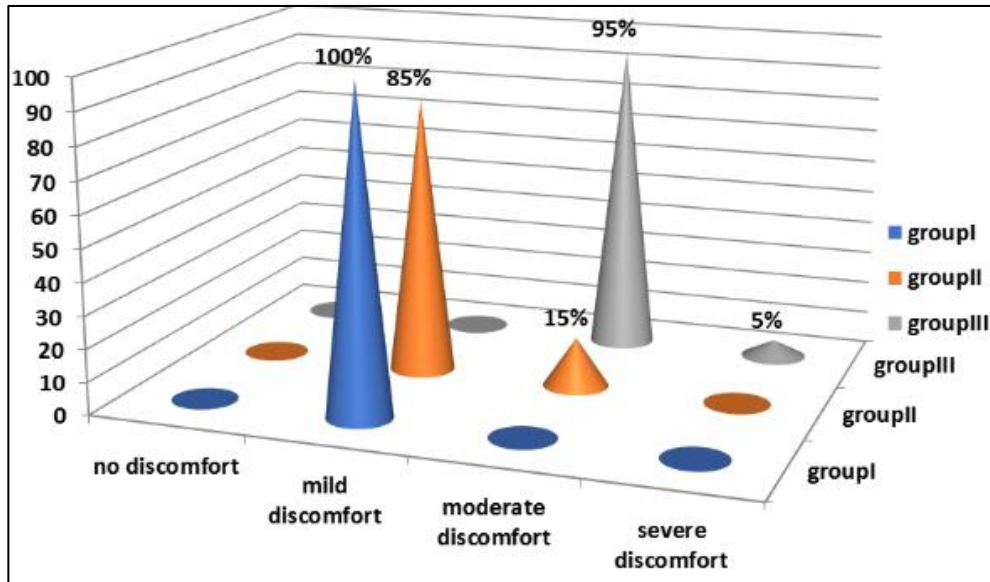


Fig 5: Cylindrical Diagram Showing Percentage Distribution of Dysmenorrhoea students in terms of the menstrual discomfort rating scale score in the Post-test 2

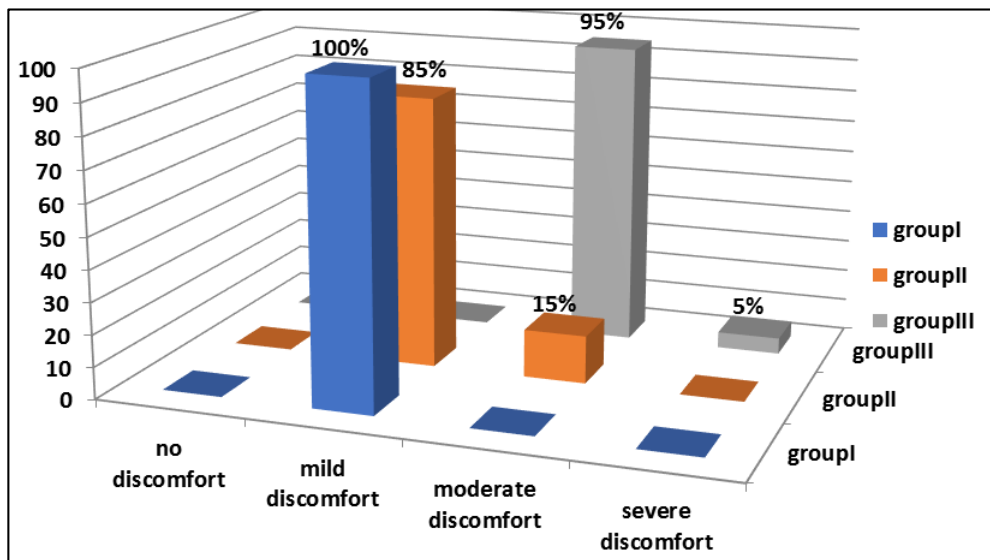


Fig 6: Bar Diagram Showing Percentage Distribution of Dysmenorrhoea students in terms of the menstrual discomfort rating scale scores in the Post-test 3

Table 4: Mean, Standard Deviation of Pre-test Menstrual discomfort rating scale score of Dysmenorrhoea students in the Group I, Group II and Group III $N_I=20, N_{II}=20, N_{III}=20$

Group	Mean	Median	Standard Deviation	Minimum	Maximum
Group I	24.8	21.5	6.94	18	38
Group II	25.4	23	6.71	18	40
Group III	23.3	21.5	5.47	18	37

Table 5: Mean and Standard Deviation of Post-test Menstrual discomfort rating scale scores of Dysmenorrhoea students in the Group I, Group II and Group III $N_I=20, N_{II}=20, N_{III}=20$

Group	Post-test 1				Post-test 2				Post-test 3			
	Mean	SD	Range	Median	Mean	SD	Range	Median	Mean	SD	Range	Median
Group I	18.4	4.74	18	17	9.95	2.72	9	9	6.75	1.99	9	6
Group II	20.8	5.3	21	19	17.75	4.59	20	17	15.05	5.39	26	15
Group III	23.05	5.67	23	21.5	23.05	5.68	24	21.5	22.9	6.13	27	21.5

Table 6: Significant difference between the Pre-test and Post-test Discomfort scores of the Group I $N_I=20$

Group	(I) Duration	(J) Duration	Mean Difference (I-J)	P	95% Confidence Interval	
					Lower Bound	Upper Bound
Group I	Pre	Post-day 1	6.40000	.000*	2.5203	10.2797
		Post-day 2	14.85000	.000*	10.9703	18.7297
		Post-day 3	18.05000	.000*	14.1703	21.9297

Table 7: Significant difference between the Pre-test and Post-test Menstrual discomfort score among Group II $N_{II}=20$

Group	(I) Duration	(J) Duration	Mean Difference (I-J)	P	95% Confidence Interval	
					Lower Bound	Upper Bound
Group IU	Pre	Post-day 1	4.60000	.064	-.1599	9.3599
		Post-day 2	7.70000	.000*	2.9401	12.4599
		Post-day 3	10.40000	.000*	5.6401	15.1599

Table 8: Significant difference between the Pre-test and Post-test Menstrual discomfort score among Group III $N_{III}=20$

Group	(I) Duration	(J) Duration	Mean Difference (I-J)	P	95% Confidence Interval	
					Lower Bound	Upper Bound
Group II	Pre	Post-day 1	.25000	1.000	-4.6751	5.1751
		Post-day 2	.25000	1.000	-4.6751	5.1751
		Post-day 3	.40000	1.000	-4.5251	5.3251

Table 9: Bonferroni t test showing significant difference in the various Post-test Menstrual discomfort rating scale score between Group I and Group III $N_I=20, N_{III}=20$

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Post-test day 1	Group I	Group III	-4.650	0.019	-8.647	-0.653
Post-test day 2	Group I	Group III	-13.100	0.000*	-16.529	-9.671
Post-test day 3	Group I	Group III	-16.150	0.000*	-19.846	-12.454

Table 10: Bonferroni t test showing significant difference in the various Post-test Menstrual discomfort rating scale score between Group II and Group III $N_{II}=20, N_{III}=20$

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Post-test day 1	Group II	Group III	-2.200	0.388	-6.197	1.797
Post-test day 2	Group II	Group III	-5.300	0.001*	-8.729	-1.871
Post-test day 3	Group II	Group III	-7.850	0.000*	-11.5	4.154

Table 11: Bonferroni t test showing significant difference in the various Post-test Menstrual discomfort rating scale score between Group I and Group II $N_I=20, N_{II}=20$

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Post-test day 1	Group I	Group II	-2.450	0.310	-6.447	1.547
Post-test day 2	Group I	Group II	-7.800	0.000*	-11.22	4.371
Post-test day 3	Group I	Group II	-8.300	0.000*	-11.996	4.604

Discussion

The present study was conducted to determine the effectiveness of progressive muscle relaxation and music for relief dysmenorrhoeal among 60 students studying at aselected hostels in Mangaluru. This chapter discusses the major findings of the study and reviews them in terms of results from other studies.

The investigator found that in Group I (80%), Group II (90%) most of the students in the pre-test had moderate pain and 20% in Group I and 10% Group II had severe pain whereas, in the post-test 100% in Group I and Group II 85% had mild pain and only 15% in Group II had moderate pain^[5]. Findings of a study on effectiveness of progressive muscle relaxation in treatment of dysmenorrhoea in Group II ($F=10.4, P<0.05$) before and after giving progressive muscle relaxation. The significant difference in the dysmenorrhoea score was also observed between Group II and Group III ($F=7.85, P<0.05$).

Another study was conducted to determine the effect of progressive muscle relaxation method on test anxiety among nursing students of Isfahan University of Medical Sciences in 2013. It was conducted in three stages on 49 male and female nursing students and divided into two groups (study and control). Independent *t*-test showed a significant difference in the mean scores of test anxiety after intervention between the two groups of study and control

($P=0.00$), but this difference was not significant before intervention ($P=0.76$). Also, in the study group, there was a significant difference in the mean scores of test anxiety before and after intervention ($P=0.00$), but this difference was not significant in the control group ($P=0.09$). The results showed that performing progressive muscle relaxation method was effective in reducing test anxiety among nursing students.^[6]

- There were some limitations of the study. The study can be repeated in large sample size to generalise the findings, a similar study can be conducted in different Three nursing institutions were selected for the study but it was difficult to go in the morning and demonstrate progressive muscle relaxation. Samples were not cooperative because I found it difficult to do for some time.

Based on the study findings, the following recommendations are stated: A similar study can be conducted for a longer duration. The study may be replicated on a larger sample.

Conclusion

The findings of the study support that progressive muscle relaxation with music is more effective method to reduce dysmenorrhoea than only PMR. PMR with music can be used as an alternative method in dysmenorrhoea.

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Conflict of Interest: Nil

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Ethical Clearance

The ethical clearance for the present study was obtained from A.J Ethics Committee, A.J Hospital and Research Centre, Mangaluru.

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