Original article

Menstrual health issues and awareness among the Female Dancers of North-24 Parganas, West Bengal, India

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ABSTRACT

Dancing is one kind of therapy in the recent time, it is a good way to stay fit, and it can improve the condition of our heart and lungs. We know that menarche is a starting of women's first menstruation cycle. It may effected by exercise, physical activities, racial background, birth weight, mother's age etc. So, present study is an attempt to find out the present conditions, duration of menstruation period, age at menarche and compare it with control population. It is based on the effects of long-time dance practice that bring some changes in individuals and not bring in controlled. For this present study dancers were selected by snowball and convenient sampling and for control group (control group) judgmental sampling was used. This study includes 70 dancers who are practicing dance for at least 5 years, and should practice at least 30 mints in a day, for four to five days in a week, and they are active in different activities in their personal life. The findings from this present study are- they all are educated and besides their dancing they are busy in some other works like jobs, tuition, some of them are students and house-wife. Most of the participants among the dancers group have painful period during menstruation (62.86%), medium flow of menstruation (72.86%) and very few have gynecological problems which was found in both cases (7.86%). The statistically significant difference was found between dancers and control in the case of age at menarche but, there is no statistically significant difference was found in case of duration of menstruation among dancers and control.

Key words: Dancers, Age at Menarche, Menstruation Duration

INTRODUCTION

Menarche is the starting of women's first menstruation cycle, and beginning of reproductive life. It indicates the events of sexual maturation of a woman. The age of

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menarche can determine by exercise, physical activities, and some other things like nutritional status, ethnic or racial background, birth weight and mother's age of menarche etc (Buck Louis et al., 2008; Strauss & Barbieri, 2009; Wronka, 2010).

For dancers the whole body is their instruments and key is good fitness it helps people to improve their condition of heart and lungs. Dance is a kind of profession which is chosen in early age and continues up to retirement. It needs regular practices and hard works for good result or good performance (Poliszczuk et al., 2016). Actually, it is a kind of physical exercise which included different body movements, steps, jump, etc. That helps to keeps their physical and mental health well.

Afsharini et al (2016) reported that the age of puberty or the age of menarche is declining from 19th to 20th centuries due to good nutrition and development of public health. They also reported that the age of menarche of athletic was significantly delayed. A study by Peja and Tase (2016) suggested that regular practicing of physical activities may leads to early puberty, and they are shorter in height than late puberty girls. It is clinically valuable because it has important impact in female life in future. Some studies suggested that who have early puberty have shorter height but 5.52 kg more weight in adulthood than the female who have late puberty (Gran et al., 1986; Van Lenthe et al., 1996; Biro 2001). Those who have late menarche have an increased risk of breast cancer (Petridou et al., 1996; Titus-Emstoff, 1998) spontaneous abortion in reproductive health (Liestol, 1980).

It is reported that the age at menarche is 12.5 – 12.9 years in different region in India (Bektas, 2008). The development level of society is inversely related to the starting age of menstruation and in underdeveloped region the age of menarche is higher (Peja & Tase, 2016). In India and other region, the starting age at menarche is 12.5 – 12.9 years (Anderson et al., 2003), due to good nutrition and good public health. Today's women are more physically active than before, some of them are engaged in exercises, dancing and different professions. In other word now a day's most of the women are physically active in different way. Female's reproductive health is so sensitive and recent studies suggest that delayed menstruation may be caused by genetic factor also (Afshariani et al., 2016). Stark et al.

(1986) suggested in his study that the role of nutrition in determining age at menarche is relatively unimportant in affluent individuals.

Still now it is not possible to measure exactly the degree of pubertal development. To indicate sexual maturity, age at menarche consider as an important milestone. Girls experience menstruation in different ages. Most of the developed countries show a downward trend in last 100 years. It has strong genetic factor, familial factor and have a vital role of socioeconomic factor (Khalid et al., 2015).

This present study among dancers were taken to find out if there are any differences in menstrual health between dancers and the control and if there is effect of regular physical activity like dancing brings any changes on menstruation health or influenced starting age at menarche and duration of menstruation or not.

MATERIALS AND METHODS:

Study Area and Participants:

This cross-sectional study attempts to find out the present condition and starting age of menstruation cycle of selected dancers (compared with controls). Before or after the study nothing was taken for experiment and the possible outcome of this study was never controlled, it's a retrospective, cross-sectional study based upon the effects of long-time practicing dance that brings changes in dancers and not in control groups. The data was collected during 2019, from Gobardanga, Chand Para and Habra of North 24 Parganas, West Bengal, India.

Sampling and Data collection:

For this present study snowball and convenient sampling were used for collecting data from dancers and judgmental sampling was used for collecting data on control. At first, dance institutions were approached for taking permission to work among the dancers who are receiving dance training in different forms and explained clearly to them about this study. The study also includes the women who are active in other works like studies, service, tuition, and housewife etc. Overall, they are all active in their life, besides receiving dance

training. Total 70 dancers were selected, who are practicing dance for at least 30 mints in a day for four to five days in a week and minimum from 5 years. Female of the same age groups with more or less same socio-economic background and active women who are not receiving any types of physical training and not even practicing any exercise or diet considered as control group. Again total 70 individuals were taken under control group. The age groups are in between 18 to 40 years in both cases. Verbal informed consent was obtained from all participants prior to interview.

A schedule was designed and data on socio-economic status are collected like age, occupation, education as well as menstruation related data like- age at menarche, condition during menstruation, duration, gynecological problem and so on. All data were collected by face-to-face interview and further cross-check was done after the interview.

Inclusion and exclusion criteria:

In this cross-sectional study, we found that many dancers became irregular after the age of 18, because of their education; some of them discontinued their training due to some health problems. So, we can't consider them as our research participant. Hence, the present study can't find a large number participant. Physically challenged individuals were excluded from the present study. Remembering this, the present study tried to cover the good number of dancers and control.

Data analysis:

The data was primarily tabulated in Microsoft Excel 2007. Data were analyzed statistically SPSS version 20 and $p < 0.05$ was considered as statistically significant level.

RESULTS AND DISCUSSION:

Educational status of studied participants:

Table-1 shows that majority (47.14%) of the dancers are continuing their graduation, followed by graduate (37.15%) and Masters (15.72%). The same trend also found among control group and corresponding figures are 61.42%, 27.15% and 11.43% respectively. The

chi-square value indicates that the differences between two groups in respect of educational status is not statistically significant.

Table 1: Educational status of studied participants

Categories	Dancer	Percentage	Control	Percentage	Total	Percentage
Up to Graduation	33	47.14%	43	61.42%	76	54.29%
Graduate	26	37.15%	19	27.15%	45	32.14%
Masters	11	15.72%	8	11.43%	19	13.57%
Total	70	100	70	100	140	100

($\chi 2$ value 2.878, 2 df, p 0.2371)

Occupation of studied participants:

Among dancers more than half (51.43%) of the participants are engaged as private tutor, followed by student (34.28%), job (11.43%) and least as housewife (2.86%). On the other hand, among control 42.86% are students, 31.42% are private tutor, 15.72% as housewife and 10% having jobs (table-2).

Table 2: Occupation of studied participants

Categories	Dancer	Percentage	Control	Percentage	Total	Percentage
Job	8	11.43%	7	10%	15	10.72%
House Wife	2	2.86%	11	15.72%	13	9.28%
Tuition	36	51.43%	22	31.42%	58	41.42%
Student	24	34.28%	30	42.86%	54	38.58%
Total	70	100	70	100	140	100

Flow of Menstruation of studied participants:

Flow of menstruation is divided among 3 categories like scanty, medium and excessive and data obtained as per perception of the studied participants. Table-3 shows that 77.14% of the dancers have experienced medium flow, followed by 17.14% have excessive and only 5.72% have scanty flow during the time of period. The corresponding figures for control group are 68.58%, 17.14% and 14.28% respectively. The chi-square value indicates that the differences between two groups in respect of menstrual flow is not statistically significant.

Table 3: Flow of Menstruation of studied participants

Flow of Menstruation	Dancers	Percentage	Control	Percentage	Total	Percentage
Scanty	4	5.72%	10	14.28%	14	10%
Medium	54	77.14%	48	68.58%	102	72.86%
Excessive	12	17.14%	12	17.14%	24	17.14%
Total	70	100	70	100	140	100

(χ2 value 2.07, 2 df, p 0.355)

Condition of Menstruation:

The condition of menstruation is divided into two types, i.e. Not-painful and Painful. Table-4 shows that 61.43% of the dancers are experienced painful menstruation period, whereas among control group it is slightly higher that is 64.28%. However, the chi-square value indicates that the differences between two groups in respect of painful (or not) menstruation period is not statistically significant.

Table 4: Condition of Menstruation of studied participants

Condition	Dancers	Percentage	Control	Percentage	Total	Percentage
Not painful	27	38.57%	25	35.72%	52	37.14%
Painful	43	61.43%	45	64.28%	88	62.86%
Total	70	100%	70	100%	140	100%

(χ2 value 0.122, 1 df, p 0.726)

Duration of menstrual periods:

Table-5 shows that 60% of the dancers have menstrual period for 4-5 days during menstruation, followed by 6 days and above (20%) as well as for 2-3 days (20%) in equal proportion. The corresponding figures for control group are 58.57%, 28.58% and 12.85% respectively. The chi-square value indicates that the differences between two groups in respect of duration of menstrual period is not statistically significant.

Table 5: Duration of menstrual periods of studied participants

Duration(Days)	Dancer	Percentage	Control	Percentage	Total	Percentage
2 – 3 Days	14	20%	9	12.85%	23	16.43%
4 – 5 Days	42	60%	41	58.57%	83	59.29%
6Days and above	14	20%	20	28.58%	34	24.28%
Total Days	70	100%	70	100%	140	100

(χ2 value 2.158, 2 df, p 0.339)

Gynecological problem:

Table-6 shows that only 8.57% of the dancers have gynecological problem, whereas, in case of control it is 7.14%. However, the chi-square value indicates that the differences between two groups in respect of gynecological problem is not statistically significant.

Table 6: Gynecological problem of studied participants

Gyne-Problem	Dancer	Percentage	Control	Percentage	Total	Percentage
No	64	91.43%	65	92.86%	129	92.14%
Yes	6	8.57%	5	7.14%	11	7.86%
Total	70	100	50	100	140	100.

(χ2 value 0.099, 1 df, p 0.753)

Duration of menstruation and age at menarche:

Table 7 exhibits that mean duration of menstruation of dancers is 4.58 ($\pm$1.41) days compared to 4.90 ($\pm$1.49) days. However, the differences between two groups in respect of mean duration of menstruation is not statistically significant. On the other hand, mean age at menarche is higher among dancers (12.92 years) compared to control (12.35 years). The differences are statistically significant.

Table 7: Duration of menstruation and age at menarche

Categories	Dancer (n=70) Mean($\pm$SD)	Control (n=70) Mean($\pm$SD)	t-value	Significance level
Duration of menstruation	4.58($\pm$1.41) days	4..90 ($\pm$1.49) days	1.30	0.19
Age at menarche	12.92 ($\pm$1.38) Years	12.35 ($\pm$1.69) Years	2.18	0.0305

CONCLUSION:

In the present study among 140 participants number of dancers are 70 and the control are 70. Age ranges from 18 to 40 years. In all cases, the differences between dancers and control are not statistically significant except age at menarche, where the differences are statistically significant. This is similar with the result of Afshariani *et al* (2016). Therefore, instead of its limitation, the study established that there is an association between late age at menarche with dancing due to heavy physical activity and exercise. As per Daryanoosh *et al.*, (2010) exercise can change hormonal concentration including insulin, cortisol, growth hormone and catecholamine etc. Dancing is one type of exercise; it may be a reason for that age at menarche of dancer is scientifically delayed than controls.

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